

ATTACHMENT 8I
ANALYTICAL PROCEDURES

ATTACHMENT 8I

ANALYTICAL PROCEDURES

The following analytical procedures are designed to identify or screen wastes. They may be used by the facility, based upon its operating experience, as rapid effective means for establishing key decision parameters pertinent to proper waste management. Analytical procedures not listed below may be added as necessary and will be taken from the references listed at the end of this appendix or other recognized sources, e.g., Association of Official Analytical Chemists (AOAC). The analytical procedures for the mandatory analysis and any supplemental analyses are described below.

I. Standard Analytical Procedures

The following is a list of the standard analytical procedures that will be used.

<u>Parameter</u>	<u>Method</u>	<u>Reference</u>
Sample Work Up Techniques:		
Inorganic Techniques		1-3010
Acid digestion procedure for flame atomic absorption spectroscopy		
Acid digestion procedure for furnace absorption spectroscopy		1-3020
Acid (Parr) Bomb digestion		3-E886,E926;6-
Organic Techniques		
Separatory funnel liquid-liquid extraction		1-3510
Continuous liquid-liquid extraction		1-3520
Acid-base clean-up extraction		1-3530
Soxhlet extraction		1-3540
Sonication extraction		1-3550
Inorganic Analytical Methods:		
Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP)		1-6010

<u>Parameter</u>	<u>Method</u>	<u>Reference</u>
Arsenic		
	Atomic absorption, furnace method	1-7060; 4-206.2
	Atomic absorption, furnace method	1-7061; 4-206.3
Barium		
	Atomic absorption, direct aspiration method	1-7080; 4-208.1
	Atomic absorption, furnace method	1-7081; 4-208.2
Cadmium		
	Atomic absorption, direct aspiration method	1-7130; 4-213.1
	Atomic absorption, furnace method	1-7131; 4-213.2
Chromium		
	Atomic absorption, direct aspiration method	1-7190; 4-218.1
	Atomic absorption, furnace method	1-7191; 4-218.2
	Hexavalent chromium: Co-precipitation	1-7195
	Hexavalent chromium: Colorimetric	1-7196; 2-3500CrD
	Hexavalent chromium: Chelation-extraction	1-7197; 4-218.4
Copper		
	Atomic absorption, direct aspiration method	1-7210; 4-220.1
	Atomic absorption, furnace method	4-220.2
Lead		
	Atomic absorption, direct aspiration method	1-7420; 4-239.1
	Atomic absorption, furnace method	1-7421; 4-239.2
Mercury (manual cold-vapor technique)		
	In liquid waste	1-7470
	In solid or semi-solid waste	1-7471
Selenium		
	Atomic absorption, direct aspiration method	1-7740; 4-270.2
	Atomic absorption, furnace method	1-7741; 4-270.3
Silver		
	Atomic absorption, direct aspiration method	1-7760; 4-272.1
	Atomic absorption, furnace method	1-7761; 4-272.2
Zinc		
	Atomic absorption, direct aspiration method	1-7950; 4-289.1
	Atomic absorption, furnace method	4-289.2
Organic Analytical Methods:		
Gas Chromatographic Methods		
	Halogenated Volatile Organics	1-8010
	Non-halogenated Volatile Organics	1-8015
	Aromatic Volatile Organics	1-8020
	Acrolein, Acrylonitrile, Acetonitrile	1-8030
	Phenols	1-8040
	Phthalate Esters	1-8060
	Organochlorine Pesticides and PCBs	1-8080
	Nitroaromatics and Cyclic Ketones	1-8090
	Polynuclear Aromatic Hydrocarbons	1-8100
	Chlorinated Hydrocarbons	1-8120
	Organophosphate Pesticides	1-8140
	Chlorinated Herbicides	1-8150

<u>Parameter</u>	<u>Method</u>	<u>Reference</u>
Gas Chromatographic/Mass Spectroscopy Methods		
GC/MS Method for Volatile Organics		1-8240; 7-624
GC/MS Method for Semi-Volatile Organics		1-8250; 8270; 7-625
Infrared Spectroscopy Methods		
		3-D2621, D4053; 5-
Screening Methods:		
Physical Description*		3-D4979
Flammability Potential Screen*		3-D4982
Water Compatibility*		3-D5058C
pH Screen*		3-D4980
Sulfide Screen*		3-D4978
Cyanide Screen*		3-D5049
Commingle Waste Compatibility		3-D5058A
Polymerization Potential		3-D5058B
Oxidizer Reactivity Screen*		3-D4981
Paint Filter Test		1-9095
Bulk Density and Apparent Specific Gravity Screen		3-D5057
Miscellaneous Analytical Methods:		
Flash point		
Pensky-Martens closed-cup method		1-101; 3-D93
Setaflash closed-cup method		1-1020; 3-D3278
Cleveland open-cup		3-D92
Acidity		2-2310
Alkalinity		2-2320
pH Measurement	1-9040, 9041, 9045; 2-4500H ⁺ ; 3-E70; 4-150.1	
Conductivity Conductance		3-D1125; 4-120.1
Viscosity		3-D88, D446, D2983
Specific Gravity	2-2710F; 3-D70, D891, D1217, D1429	
Total and Amenable Cyanides	1-9010; 2-4500CN ⁻ C,G; 4-335.1	
Free Cyanides		2-4500CN ⁻ H,I
Total Sulfides		1-9030; 2-4500S ²⁻
Oxidation-Reduction (Redox) Potential (ORP)		3-D1498
Anions by Ion Chromatography		3-D4327; 4-300.0
Chlorides		2-4500Cl ⁻ ; 4-300.0, 325.3
Sulfates		2-4500S ²⁻ ; 4-300.0, 375.3
Nitrates		2-4500N ₃ ⁻ ; 4-300.0, 352.1, 353.2
Fluoride		2-4500F ⁻ ; 4-300.0, 340.2, 340.3
Bromides		2-4500Br ⁻ ; 4-300.0, 320.1
Phosphates		2-4500P ³⁻ ; 4-300.0, 365.1-4
Ammonia		4-350.3
Heat Value		3-D240, D2015
Total Chlorine Content		3-D808, D4327
Water Content		3-D95, D3173, E201
Phenols		2-5530, 6420; 4-420.1
Sulfur		3-D129, D3177, D4327
Halogen Content		3-D808, D2361, D4327

* Mandatory Analysis

<u>Parameter</u>	<u>Method</u>	<u>Reference</u>
Solids		
Total (TS) at 103-105°C		2-2540B; 4-160.3
Dissolved (TDS) at 180°C		2-2540C; 4-160.1
Suspended, Total (TSS) at 103-105°C		2-2540D; 4-160.2
Fixed and Volatile at 500°C		2-2540E, 2540G; 4-160.4
Ash Content		3-D482, D3174
Oil and Grease		2-5520; 4-413.1, 413.2
Petroleum Hydrocarbons, Total Recoverable		2-5520F; 4-418.1
Total Organic Carbon		2-5310; 3-D2579
Extraction Procedure		1-1310
Toxicity-Characteristic Leaching Procedure (TCLP)		8-1311

II. Unique Analytical Procedures

The following analytical procedures provide important quantitative information pertinent to certain processes. In some cases, these tests provide information not available from standard analytical procedures found in Section II which follows. These tests provide important operation information.

Solvent Screen - Uses standard analytical procedures tailored to cover a range of organic compound types for quick screening of common industrial organics.

Radioactivity Screen - A sample of the material is passed by a geiger counter or survey meter. Radioactivity levels above background are noted, recorded, and investigated.

Load Bearing Strength by Pocket Penetrometer - The load bearing strength of stabilized waste material is determined by pushing a pocket penetrometer or similar device into the sample. It is grasped by the handle and pushed into the sample at a constant rate up to the calibration mark. The load bearing strength is read from the low side of the indicator ring. This process is repeated two more times and the average of the three results is recorded in tons/square foot.

Quick Leach Extraction - An amount of sample is mixed with the appropriate extraction fluid and stirred for a designated time period. After filtration, the pH and/or metals content are determined using the appropriate methods. This test will provide the type of information similar to a standard TCLP test but in less time.

Microwave Aided Digestion - A portion of sample is weighed into an appropriate microwave digestion vessel and digested using a mixture of nitric and hydrochloric acids. The vessel is heated in a microwave oven using programmed steps to minimize the possibility of splattering. After cooling, the contents are diluted to volume, filtered and analyzed by the appropriate method.

PCBs Screening by Immunoassay - A portion of the waste sample is prepared for immunoassay by performing an extraction with methanol followed by filtration. The sample extract is then mixed and incubated in a step-wise process inside the antibody-coated tubes. The mechanics of mixing, incubating, and measuring takes about 30 minutes and results in a color change in each tube. The color development is inversely proportion to the concentration of PCBs and is detected by a photometer.

References:

The above-referenced procedure are described in the following publications. The first digit of the reference numbers above are keyed to the numbers shown below:

1. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, U.S. Environmental Protection Agency, Office of Solid Waste (NTIS, 5285 Port Royal Road, Springfield, VA 22161) or more recent edition or revision (GPO, Supt. of Documents, Washington, DC 20402).
2. "Standard Methods for the Examination of Water and Wastewater", 18th Edition, American Public Health Association (1015 Fifteenth Street, NW, Washington, DC 20005), American Water Works Association, Water Environment Federation, 1992, or more recent edition or update.
3. "Annual Book of ASTM Standards", American Society for Testing and Materials (1916 Race Street, Philadelphia, PA 19013-1187), 1992, or more recent edition or revision.
4. "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory (Cincinnati, OH 45268), as revised March 1983, ore more recent revision or technical edition.
5. Infrared Analysis Method in IERL-RTP Procedures Manual: Level 1 Environmental Assessment (2nd Edition), EPA-600/7-78-201, October, 1978, or more recent edition.
6. "Acid Digestion Bombs", Bulletin 4745, Parr Instrument Company (Moline, IL 61265), or more recent bulletin.
7. "Method for Organic Chemical Analysis of Municipal and Industrial Wastewater", Appendix A of Title 40 Code of Federal Regulations Part 136, U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory-Cincinnati, as amended June 1986 or more recent revision.
8. "Method 1311 Toxicity Characteristic Leaching Procedure (TCLP)", Appendix II of Title 40 Code of Federal Regulations Part 261, U.S. Environmental Protection Agency, Office of Solid Waste, as amended February 1993 or more recent revision.

Standard analytical procedures not listed here, which may be needed, will be taken from the above-referenced sources or other recognized sources, e.g., Association of Official Analytical Chemists (AOAC).

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4. "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory (Cincinnati, OH 45268), as revised March 1983, ore more recent revision or technical edition.
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6. "Acid Digestion Bombs", Bulletin 4745, Parr Instrument Company (Moline, IL 61265), or more recent bulletin.
7. "Method for Organic Chemical Analysis of Municipal and Industrial Wastewater", Appendix A of Title 40 Code of Federal Regulations Part 136, U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory-Cincinnati, as amended June 1986 or more recent revision.
8. "Method 1311 Toxicity Characteristic Leaching Procedure (TCLP)", Appendix II of Title 40 Code of Federal Regulations Part 261, U.S. Environmental Protection Agency, Office of Solid Waste, as amended February 1993 or more recent revision.

Standard analytical procedures not listed here, which may be needed, will be taken from the above-referenced sources or other recognized sources, e.g., Association of Official Analytical Chemists (AOAC).

ATTACHMENT 8J
QUALITY ASSURANCE/QUALITY CONTROL

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8J Quality Assurance/Quality Control

The following quality assurance/quality control (QA/QC) information for this managed CWM facility is being provided as required by 40 CFR Part 270.30(e) and in accordance with the following EPA guidance documents:

- Chapter One, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*, SW-846, Chapter 1, U.S. Environmental Protection Agency, Office of Solid Waste, Washington, DC, July 1992.
- *Waste Analysis Plans: A Guidance Manual*, EPA/430-SW-84-012, October 1984.

QA/QC procedures are applicable to both sampling procedures and analytical techniques. QA/QC information for these two elements has been included in this WAP, as recommended in the above-mentioned *Waste Analysis Plans: A Guidance Manual*.

This section does not provide specific performance standards of quality control procedures for individual sampling and analysis techniques. Such specifics are defined on a corporate-wide basis for all Chemical Waste Management, Inc. (CWM) facilities. The specific performance standards are dynamic and are revised as warranted to reflect technological advances in sampling and analytical techniques. These performance standards are described in the CWM corporate QA/QC policies, portions of which have been summarized and included in the following sections.

8J-1 Sampling Program

Sampling procedures for facility operations are described in Section 8.4 of the WAP. The selection of the sample collection device depends on the type of sample, the sample container, and the sampling location. In general, the methodologies used for specific materials correspond to those referenced in 40 CFR Part 261, Appendix I. The selection and use of the sampling device is supervised or performed by a person thoroughly familiar with the sampling requirements.

Sampling equipment is constructed of non-reactive materials such as glass, PVC plastic, aluminum, or stainless steel. Care is taken in the selection of the sampler to prevent

contamination of the sample and to ensure compatibility of materials. For example, non-fluorocarbon plastic bottles are not used to sample organic wastes and glass bottles are not used to collect hydrofluoric acid wastes.

With some exceptions, all bulk and containerized waste shipments will be sampled (see Section 8.4 of this WAP). Individual container samples that are related may be composited prior to analysis, provided that individual samples are similar in physical appearance.

8J-2 Analytical Program

CWM has developed a program of quality control practices and procedures to ensure that precision and accuracy are maintained throughout its laboratories. At the corporate level, the program is monitored by CWM QA Programs. All CWM facility laboratories participate in this program. Non-company laboratories employed by the company demonstrate quality control practices that are comparable to the company's program.

The quality control program is based on *Handbook for Analytical Quality Control in Water and Wastewater Laboratories*, EPA 600/4-79-019, March 1979. Good laboratory practices which encompass sampling, sample handling, housekeeping and safety are maintained at all laboratories. The following specific practices are implemented at this facility laboratory.

8J-2.1 Instrument Performance Parameters

Instrumentation is evaluated through the use of an instrument performance check (IPC). Divergence from acceptable benchmark criteria requires correction. The instrument performance check standard results are recorded.

8J-2.2 Contamination Evaluation

Method blanks may be prepared and analyzed to ensure sample contamination has not occurred. If blank analyses do not fall within acceptable limits, corrective action is required.

8J-2.3 Quality Control Check Sample

A quality control check sample is analyzed periodically. The results show that analytical procedures are properly performed and that calibration and standardization of instrumentation are within acceptable limits. Acceptable performance demonstrates that

prescribed precision and accuracy are being maintained. Results of these analyses are reported on a regular basis to CWM QA Programs.

8J-2.4 Duplicate Analyses

A sample or fortified sample is analyzed in duplicate to assess analytical precision in the laboratory. Typically, a ratio of one duplicate for each twenty samples analyzed is maintained.

8J-2.5 Blind Duplicate Analyses

On a regular basis a previously analyzed sample is arbitrarily chosen and logged in as a new sample without previous knowledge of results by the analyst(s). The Laboratory Manager maintains a cross-referenced record of samples submitted as blind duplicates. The laboratory manager assesses the performance of analysts and methods by using blind duplicate results.

8J-2.6 Fortification of Samples

If deemed appropriate, fortifications are employed to monitor recoveries and demonstrate accuracy. This procedure provides information about the effect of the sample matrix on the analyte in question. Normally, the same sample used for the duplicate analysis is fortified.

8J-2.7 Reference Materials

Reference materials from the National Institute of Standards and Technology (NIST) or from another source are obtained and analyzed according to normal laboratory methodology to verify accuracy of the methods and acceptability of the calibration standards. When available, these materials are analyzed at least quarterly. Reference materials are not required for screening methods.

8J-3 Reports

The facility typically reports the following applicable information (or a summary of this information) on a regular basis to CWM QA Programs:

- Test parameter and instrument used,
- Number and statistical results of QC check sample analyses,
- Number and statistical results of duplicates,

- Number and statistical results of fortifications,
- Number of samples analyzed.

8J-5 Conclusion

The aforementioned sampling and analytical procedures help ensure that the data obtained are precise, accurate, and representative of the waste stream being sampled. The results of these analyses are used by facility management to decide whether or not to accept a particular waste and, upon acceptance, to determine the appropriate method of disposal. They are also important to ensure that wastes are managed properly by the facility and that incompatible wastes are not inadvertently combined. For these reasons, the quality of the data, the thoroughness and care with which the sampling and analyses are performed and reported, provide an important basis for day-to-day operational decisions.

SECTION 9
SITE OPERATIONS

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List of Attachments

- Attachment 9A General Daily Inspection Schedule and Checklist
- Attachment 9B General Weekly Inspection Schedule and Checklist
- Attachment 9C General Quarterly Inspection Schedule and Checklist
- Attachment 9D Job Descriptions, Training Requirements, and Training Course Outline

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SECTION 9

SITE OPERATIONS

9.1 Site Security Plan

Ford Motor Company developed this site security plan in accordance with 40 CFR 264.14.

- All entry to the facility is through one main gate located off Oakwood Boulevard, between Interstate 94 and Southfield Freeway. During hours of operation, all vehicles and visitors must pass by the operations office and the attended guard shack.
- The routine operational hours for the hazardous waste site is 7:00 a.m. to 4:00 p.m., Monday through Friday. The solid waste site is routinely open 16 hours per day, Monday through Friday. This facility reserves the right to vary the operational hours to accommodate waste shipments.
- A six foot cyclone fence topped with three strand barbed wire has been constructed around the entire perimeter of the site. Surface water drains and large screening berms on the site perimeter further impede unknowing or unauthorized entry by persons or animals.
- Warning signs that read "No Trespassing - Violators will be Prosecuted" are affixed to the perimeter fence at intermittent spacing which will discourage unauthorized entry.
- Warning signs that read "Danger Unauthorized Personnel Keep Out" are posted at each entrance to the active portion of the facility in sufficient numbers to be seen from any approach to the active area. These signs are legible from a distance of at least 25 feet.
- Physical contact with the wastes, structures, or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of the facility.
- Entrance gate is locked by manifest checker when facility is closed.
- Ford Motor Company Plant Security provides additional security coverage.

9.2 General Inspection Procedures

Ford Motor Company developed the inspection schedule in accordance with 40 CFR 270.15 and 40 CFR 264.15.

9.2.1 Surveillance Schedules and Procedures

During hours of operation, surveillance is the responsibility of the supervising inspector, operations building staff as well as operators at the active fill area. During

hours when the site is closed, the only entry gate is locked preventing unauthorized entry. Refer to Section 9.1, Site Security Plan, for more information.

9.2.2 Routine Maintenance Procedures and Schedules

To minimize the possibility of unplanned sudden or non-sudden releases of hazardous wastes or hazardous waste constituents to air, soil or water, routine facility inspections are conducted and maintenance performed as required. Attachments 9A, 9B, and 9C consist of a daily, weekly, and quarterly inspection checklist. Records and results of inspections are kept in the facility inspection notebook for 3 years. The attached Inspection Schedule Forms (Attachments 9A - 9C) are provided as an example of the type of forms that may be used at the facility. Ford reserves the right to modify or replace these forms as conditions warrant.

9.3 Preventative Procedures

To fulfill the requirements of 40 CFR Part 270.14(b)(8), this section details the procedures, structures, and equipment used at the APCML to:

- prevent hazards in unloading operations;
- prevent run-off from hazardous waste handling areas to other areas of the facility or environment;
- prevent flooding;
- prevent impacting water supplies;
- mitigate effects of equipment failure and power outages; and
- prevent undue exposure of personnel to hazardous waste.

9.3.1 Unloading Operations

Hazards associated with loading/unloading operations are prevented primarily through the thorough screening process used on candidate waste streams. This is discussed in greater detail in Section 8, Waste Analysis Plan. As detailed, ignitable, reactive, and incompatible wastes are not to be accepted at the facility, thereby reducing the danger of explosions, formation of toxic gases, or reactions. Ignitable and reactive waste will be identified prior to the waste reaching the landfill (via the pre-acceptance screening process). Thus, no ignitable or reactive waste will be transmitted to the landfill.

Ford requires that persons in the unloading area in the landfill be attentive to the location of mobile equipment, such as arriving and departing highway waste hauling vehicles or the landfill waste hauling and compaction equipment. The landfill vehicles and equipment will be provided with backup alarms. Signs are also posted to provide a constant reminder of this danger.

Vehicles are typically unloaded by hydraulic dumping systems. The greatest potential danger in the unloading areas is that provided by materials as they fall from the vehicles, tailgates swinging as the load is lifted, plus the movement of other vehicles (both waste carriers and landfill operating equipment) in the area.

To prevent accidents occurring due to these situations, vehicle drivers are required to stay near their equipment while operating the hydraulic dumping system, in addition to securing tailgates before leaving the area. Highway waste hauling vehicle drivers are also required to depart the site immediately after completing the off-loading operation. Personnel are strictly forbidden from salvaging off-loaded articles.

9.3.2 Run-Off/Water Supplies

The topography of the area as shown on the Engineering Plans in the Supplemental Information prevents run-off by collecting any storm waters in the cell. Contact water is not discharged to surface drains but is treated. The area is served by city water provided by Detroit Water and Sewerage Department.

The design measures taken to prevent impacting area water supplies are detailed in the various engineering design reports contained in the Supplemental Notebook. The area's hydrogeologic setting has been detailed in the Hydrogeologic Report (Supplemental Information Notebook).

The landfill has been designed with a double liner system, using both naturally low hydraulic conductivity clay materials and synthetic geomembrane liners, with a leachate collection system to contain and collect the leachate generated in the landfill. In addition, the Hydrogeologic Report details how the low permeability clay soils underlying the site provide a very favorable geologic setting for a land disposal facility.

9.3.3 Equipment and Power Failures

A replacement sump pump is available to replace the pump in Cell II in times of mechanical failure. Heavy equipment and portable generators are also available locally in case of a mechanical or power failure.

9.3.4 Personnel Protection Equipment

Operators at this facility are required to wear Level D or Level C protection depending on the daily conditions. Appropriate respiratory protective devices will be provided to operators as warranted by the accepted waste stream.

9.3.5 Ignitable, Reactive, or Incompatible Wastes

Ignitable, reactive, or incompatible wastes are not handled at the facility. Procedures for identifying and excluding unacceptable waste streams from the landfill are described in Section 8, Waste Analysis Plan.

9.3.6 Releases to Atmosphere

Precautions to prevent releases to the atmosphere is addressed by: 1) daily cover placement over waste, 2) dust control by wet methods, and 3) trucks are required to stay on constructed roads.

9.4 Preparedness Plan

USEPA requires that the facility be designed, constructed, maintained, and operated to minimize the chance of fire, explosion, or other unplanned release of hazardous waste or its constituents to air, soil, or surface water that poses a threat to human health or the environment. The site has been designed to minimize both the potential for and consequences of fire, explosion, or material release.

Section 6 of this Operating License Renewal Application provides a general facility description. Information on landfill design and site specific conditions are in the Supplemental Information Notebooks.

The Contingency Plan, Section 10 of this document, includes a listing of the standard safety equipment that is maintained at the facility. This equipment includes, but is not limited to, personal protective gear, fire extinguishers, and wash stations, plus the other emergency equipment.

9.4.1 Emergency Communications Equipment

Internal/external communications linking the operations office to locations throughout the facility have been established to coordinate all emergency response activities. All landfill equipment operating in the active disposal cell is equipped with two-way radios for routine and emergency communications.

9.4.2 Equipment Testing and Maintenance

The emergency equipment used at the APCML is inspected, tested, and maintained by site personnel to ensure proper operation during an emergency. All safety equipment, security devices, and communications equipment is inspected regularly per the schedules described in Section 9 of this document. The inspections serve to correct equipment malfunctions, replenish inadequate stock, and identify structural deterioration. An inspection log sheet is used to record the date, equipment status, inspector name, comments, and remedial actions taken, if any.

9.4.3 Arrangements with Local Authorities

Ford maintains contact with local police and fire departments, health care providers, and waste treatment facilities. Arrangements with local authorities with respect to the APCML are as follows:

- Familiarize police and fire departments, and emergency response contacts with the facility layout and with the properties of hazardous wastes handled. Also, familiarize these contacts with the potential hazards associated with the facility, places where personnel normally work, entrances to and roads inside the facility, and evacuation routes.
- Designate primary emergency authority to a specific police or fire department, in the event that more than one department were to respond.
- Familiarize local hospitals with the properties of hazardous wastes handled and the type of injuries or illnesses that could result from fires, explosions, or releases.
- Obtain agreements with emergency response contractors and equipment suppliers.
- Document any state or local authorities refusing to enter into such an agreement.

9.5 Traffic

Waste handling vehicles will enter the site through the main gate on Oakwood Boulevard and proceed past an attended guard shack to the Operations Office where the waste will be checked to ensure the waste meets the waste acceptance criteria as specified in the Section 8, Waste Analysis Plan. All waste transported to the site will be by licensed waste handling vehicles which comply with state and federal regulations. Adequate space is available near the Operations Office to allow staging of vehicles while waste acceptance procedures are carried out to prevent the disruption of traffic on Oakwood Boulevard.

Following acceptance of the waste load, trucks will be directed along the access road to the active fill area in the base of Cell II of the landfill. Waste loads will be unloaded only in the unloading area in the base of Cell II and trucks will avoid contact with the waste by travelling only on designated roads in the cell. All truck traffic that has travelled beyond the operations visitors area will be routed through an on-site wheel wash to remove any material that may have accumulated on the wheels of the vehicle prior to exiting the site. Periodically, sediments from the wheel wash facility will be removed and characterized. After characterization, the material will be transported to a local waste treatment facility for proper treatment and disposal.

Ford has estimated approximately 10 trucks carrying hazardous waste for disposal in Cell II will enter the site on a daily basis. This is in addition to the approximately 40 trucks per day containing nonhazardous waste for disposal in the non-hazardous cell on the site. Traffic in the area surrounding the site consists primarily of truck traffic associated with local industrial operations. Given the size and current use of the surrounding roads, the truck traffic associated with the APCML is not anticipated to impact current traffic patterns.

The access road has recently been upgraded to provide better access to the site and allow for greater control over traffic patterns on-site. The design calculations for the new access road are included in the Supplemental Information notebooks.

9.6 Personnel Training

9.6.1 Federal Hazardous Waste Regulation Requirements

Federal hazardous waste training requirements as described in 40 CFR 264.16 include the following:

- Training should be directed by an individual trained in hazardous waste management procedures, and it must include direction on job-specific procedures.
- The training should be designed to guarantee that TSDF personnel can respond effectively to emergencies, and should cover:
 - Procedures for using, inspecting and replacing facility emergency and monitoring equipment
 - The site's communication or alarm system
 - Responses to fires or explosions
 - Responses to groundwater impact incidents
 - Shutdown of operations
- Training must be completed within 6 months of employment at the site. Employees must not work in unsupervised positions until the training is completed.
- Annual refresher training must be given.
- The following records must be kept at the facility:
 - The job title, job description including qualifications and name of employee filling each position
 - A description of the type and amount of training required by each position
 - Records documenting the training that each employee has received

The APCML will comply with these requirements. A training program outline is located in Attachment 9D, for use in introductory and ongoing training programs. Also included in Attachment 9D are job descriptions and training requirements for each position.

9.6.2 Michigan Hazardous Waste Regulation Requirements

The federal requirements listed above are adopted by reference in Part 111 of Act 451 R299.9605. In addition, to obtain a hazardous waste operating license, the following items will be provided:

- Personnel training documents and records will be maintained at the facility, until closure is completed and certified.

- Training will be conducted as required by Michigan regulations. The training will be equivalent to that contained in the typical course outline in Attachment 9D of this document. Documents and records will be kept as required by R 299.9605.
- Federal training requirements will be followed. Training records for current employees will be kept until closure. Training records for former employees will be kept for at least three years after employment is terminated. In addition, Attachment 9D lists the following specific areas to be discussed in training for the four job descriptions it covers:
 - The physical properties and characteristics of wastes
 - Waste inspection and verification procedures
 - Manifest processing and the handling of discrepancies
 - Recordkeeping procedures
 - General inspection procedures
 - Pertinent waste handling and disposal regulations
 - The Spill and Accident Prevention Plan, Contingency Plan and Emergency Procedures
 - Fill and grading plan
 - Safety procedures and procedures for using, inspecting, repairing and replacing emergency safety and monitoring equipment

APCML will comply with these requirements.

9.6.3 OSHA Hazardous Waste and Emergency Response Operation Regulation Requirements

In addition to meeting state and federal hazardous waste training requirements, APCML will also comply with OSHA health and safety training requirements as described in 29 CFR 1910.120(p) as follows:

- TSD facilities must develop and implement a training program as part of their written health and safety program. The initial training shall be for 24 hours and 8 hours of annual refresher training shall be given. Employees shall be given a written certificate attesting that they have successfully completed the necessary training. The basic elements to be covered are:
 - Names of personnel and alternates responsible for site safety and health
 - Safety, health and other hazards present on the site

- Use of personal protective equipment
- Work practices by which the employee can minimize risks from hazards
- Safe use of engineering controls and equipment on the site
- Medical surveillance requirements, including recognition of symptoms and signs which might indicate overexposure to hazards
- Decontamination procedures
- The emergency response plan
- Confined space entry procedures
- The spill containment program
- Emergency response employees must receive training before being called on to perform in real emergencies. The employer must certify in writing as required, at least yearly, that these employees have completed training or demonstrated competency. The method of certification must be recorded and maintained by the employer. The training shall include:
 - The elements of the emergency response plan
 - Standard operating procedures the employer has established for the job
 - The personal protective equipment to be worn
 - Procedures for handling emergency incidents

Under 29 CFR 1910.1200, OSHA also requires the following training in hazard communication:

- Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area.
- The physical and health hazards of the chemicals in the work area.
- The measures employees can take to protect themselves from these hazards.
- The details of the hazard communication program developed by the employer.

APCML will comply with these requirements.

9.6.4 DOT Hazardous Materials Regulation Requirements

- The Department of Transportation has the following training requirements under 49 CFR 172.700 as follows.
- Hazardous materials training must be given to any employee who, during the course of employment:
 - Loads, unloads, or handles hazardous materials.
 - Tests, reconditions, repairs, modifies, marks, or otherwise represents containers, drums, or packaging as qualified for use in the transportation of hazardous materials.
 - Prepares hazardous materials for transportation.
 - Is responsible for the safety of transporting hazardous materials.
 - Operates a vehicle used to transport hazardous materials.
- Hazmat employees hired by July 1, 1993, must be trained by October 1, 1993. Hazmat employees hired after July 1, 1993, must receive training within 90 days of employment. The employer must certify that employees have been trained and tested in their respective areas of hazardous material transportation responsibility. The training and testing must be documented, and this documentation must be kept for employment plus 90 days. The training must be repeated at least every 2 years and shall include the following:
 - General awareness/familiarization training to provide familiarity with the hazardous materials transportation requirements.
 - Function-specific training covering the hazardous materials transportation requirements which are specifically applicable to the employees job.
 - Safety training concerning emergency response, measures to take for protection from the hazards associated with hazardous materials, and methods and procedures for avoiding accidents such as the proper procedures for handling packages of hazardous materials.

APCML will comply with applicable state and federal DOT regulations.

9.7 Stormwater Controls

9.7.1 Run-On Controls

During the construction of the APCML, drainage ditches were constructed on three sides of the landfill to prevent run-on from entering the fill area. As required under 40 CFR 264.301, the existing stormwater controls were evaluated to determine whether

or not they are capable of handling flows from the 25-year, 24-hour storm event. For this analysis, the following procedure was used:

1. Drainage sub-basins were outlined for the surrounding areas sloping toward Cell II. A topographic map dated April 7, 1993 was used to determine these drainage basins.
2. The times of concentration hydrographs, and peak flows for a 25-year, 24-hour storm were calculated for each drainage sub-basin, using standard TR-55 methodology.
3. The size and location of current drainage ditches were assessed to determine whether or not they are adequate to divert 25-year, 24-hour storm event run-on away from Cell II.

The peak flow for each of 13 subareas was determined using standard TR-55 methodology on a Hydropak computer software package. The current ditch size was estimated based on a current site topographic map (dated April 7, 1993) and input from Ford staff (sideslopes, bottom widths, and average slopes). Using the peak flow hydrographs for the 25-year, 24-hour storm, the depths of flow in the surrounding drainage ditches were estimated and are summarized below. Flow depths in the ditches ranged from 0.5 feet to 1.6 feet.

Drainage Ditch	Contributing Flow Area (acres)	Peak Flow (25-year) (cfs)	Estimated Flow Depth (feet)	Estimated Depth of Ditch (feet)
1	10.4	22	0.9	5
2	22.0	42 ³	1.7	5
3	3.3	9	0.5	2
4A	8.0	15.5	0.7	2
4B	11.9	31.2	1.2	1.5
5A	2.2	6	1.1	1.5
5B	2.1 + O.F.	20 ⁴	1.0	5
6A	0.65 + O.F.	15 ⁵	2.5	5
6B	0.65	2	1.5	5
7 ¹	15.7	35 ⁶	1.26	1
8	0.9	3	0.8	1
9 ²	10.2	29	--	--
10	2.4	7 ⁷	0.8	1

Notes:

- ¹ Ditch 7 overflows into ditch 6A, which has sufficient capacity to prevent overflow into Cell 2.
- ² Area 9 does not have a ditch. It is the newly constructed Cell 2 liner, which collects stormwater in the center of the Cell.
- ³ Ditch 2 peak flow is the sum of peak flows from Areas 2, 5A, and 69 percent of peak flow from Area 7.
- ⁴ Ditch 5B peak flow is the sum of peak flows from Areas 6A and 5B and percent of the peak flow from Area 7.
- ⁵ Ditch 6A peak flow is the sum of the peak flow from Area 6A and 37 percent of the peak flow from Area 7 (the Ditch 7 overflow).
- ⁶ Ditch 7 peak flow is the sum of peak flows from Areas 7 and 8.
- ⁷ Ditch 10 peak flow is the sum of peak flows from Areas 6B and 10

From this analysis, it is evident that Ditch 7 is undersized to adequately contain the 25-year peak flow from its contributing areas. However, the overflow from this ditch would still not enter Cell 2. The overflow from Ditch 7 would flow into ditch 6A which has sufficient capacity to accommodate this overflow.

For ditches 1, 3, 4A, 4B, 5A, and 8, peak flow analysis alone is sufficient to determine adequacy of stormwater controls, since these ditches each drain only one sub-basin and eventually drain off-site. Ditches 2, 5B, 6A, 7, and 10 were analyzed by summing the peak flows from all contributing areas, since they accept runoff from two or more of the outlined sub-basins.

Ditches 5B and 10 are actually sumps with no natural outfalls. Therefore, the collected stormwater must be pumped out. To determine whether or not these sumps are large enough to hold the 25-year, 24-hour runoff volume without overflowing, it was necessary to perform a stormwater volume capacity analysis, in addition to the peak flow analysis. The stormwater volume capacity analysis found that the south sump would have sufficient storage capacity to contain the 25-year, 24-hour storm runoff from its contributing areas. The capacity of the north sump is close to the estimated runoff from a 25-year storm event. If runoff exceeds the sump capacity, the pumping capacity would be supplemented as required to prevent runoff from entering the cell.

9.7.2 Run-off Control System

Any water entering Cell II and contacting waste is treated as leachate and collected through the leachate collection system.

9.7.3 Management of Collection and Holding Units

Surface water collected in drainage ditches, and the sedimentation basin is diverted away from the site and ultimately discharges to the Allen or Tyre Drains. Any water entering the fill area and contacting waste is treated as leachate and handled through the leachate collection system. Non-contact water in Cell II will be pumped to the surrounding drainage system.

9.8 Manifest System

Ford Motor Company has developed this waste manifest system in accordance with Part 111 of Michigan's Act 451, R299.9608. This section complies with the requirements discussed in the Waste Analysis Plan.

- Once the shipment is accepted for disposal the manifest checker enters the shipment information into the computerized data base system, signs and dates each copy of the manifest to certify that the hazardous waste covered by the manifest was received and then gives the driver (transporter) at least one copy of the signed manifest.
- Completion of the shipment information into the data base system includes:
 - Enter the date waste was received at the landfill
 - Enter the common name of the waste (e.g., Electric Arc Furnace Dust) which should be identified on the shipping manifest.
 - Check the appropriate box which best characterizes the physical form of the waste
 - Enter the Waste Number from the manifest
 - If the material is a "D" series waste (i.e., Dxxx or xxxD) describe the process from which the waste was generated (e.g., zinc-containing filter cake from electrogalvanizing)
 - If more than one hazardous waste characteristic applies to the waste, the waste description must include all applicable EPA Hazardous Waste Numbers and Michigan Part 111 Act 451 numbers
 - List the volume or weight of the waste
 - Enter the Handling Code and the corresponding date.
 - List the coordinates for the area in which the waste will be disposed (refer to the grid pattern on the waste location map)
 - Enter the manifest number

- If a waste is rejected for any reason at the landfill, enter the appropriate information on the rejected waste log
- Send a copy of the manifest to the Generator within 30-days after the delivery.
- A copy of each manifest will be retained at the facility, at least 3 years from the date of delivery.
- Send a copy of the manifest to the DNR Director within a period of 10 days after the end of the month in which the waste was received.
- If a significant manifest discrepancy is discovered, an attempt to reconcile the discrepancy with the waste generator or transporter shall be made via telephone conversations or other methods. If the discrepancy is not resolved within 15 days after waste receipt, a letter will be submitted to the DNR Director and Regional Administrator describing the discrepancy and attempts to reconcile the issue. A copy of the manifest and other supporting documentation will be included.
- Significant manifest discrepancies are defined as variations of more than 10 percent in weight (bulk waste) and obvious differences discovered by inspection or waste analysis.

9.9 Recordkeeping

Ford Motor Company has developed the recordkeeping requirements in accordance with Part 111 of Michigan's Act 451, R299.9609. A written operating record will be maintained at the facility until closure including the following information:

- A description and the quantity of each hazardous waste received, including the method and date of its disposal shall be recorded and maintained at the facility. This includes the information outlined by Section 10.8.
- The location and quantity of each hazardous waste within the landfill cell will be recorded on a map or diagram of each cell and will be recorded and maintained at the facility. This information includes cross-reference to the specific manifest document numbers (10.8).
- Records and results of wastes analyses performed as specified in 40 CFR 264.13, 264.314 will be recorded and maintained at the facility.
- Records and results of inspections as required by 264.15(d) will be recorded and maintained for a minimum of 3 years.
- Monitoring, testing or analytical data and corrective action when required by 264 subpart F, 264.19, 264.302 - 264.304, and 264.309 will be maintained at the facility.
- Notices to generators as specified by 264.12(b) will be maintained at the facility.

- Closure cost estimates under 264.142 and post closure cost estimates under 264.144 will be maintained at the facility.
- Annual certification that a program is in place to reduce the volume and toxicity of generated hazardous waste (to the degree economically practicable) will be maintained at the facility.
- Records of the quantities (and date of placement) for each shipment of hazardous waste disposed under an extension to the effective date of any land disposal restriction granted by 268.5, and petition under 268.6 or certification under 268.8 and a notice required by the generator under 268.7(a) will be maintained at the facility.
- A copy of the notice and certification demonstration required by a generator or owner or operator of a treatment facility under 268.7 or 268.8 will be maintained at the facility.
- Any other records required by the construction permit or operating license will be maintained at the facility.
- Upon request, all operating records will be made available (at reasonable times) for inspection by the director or a representative of DNR designated by the Director.
- The records retention period will be extended automatically during the course of any unresolved enforcement action regarding the facility or if requested by the Director.
- Upon closure, a copy of disposal location and quantity records will be submitted to the MDNR Director, the Regional Administrator, and the local land authority.
- Information gathered on the different waste streams including the following:
 - a) The completed Waste Characterization Report form (or equivalent information).
 - b) All laboratory analysis results from the generator and the facility laboratory used to support the classification of the waste.
 - c) General correspondence regarding the waste between the facility and the generator.
 - d) Notes and additional information compiled by the facility personnel from conversations with the generator or from the testing of the sample supplied by the generator.

9.10 Reporting

Ford Motor Company developed the reporting requirements in accordance with Part 111 of Michigan's Act 451, R299.9610 and includes the following tasks:

- A biennial report will be prepared and submitted to the Regional Administrator by March 1 of each even numbered year. This report will be submitted on Form 8700-13B. The report will include the following:
 - EPA identification number, name and address of the facility
 - Identification of the calendar year covered by the report
 - EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year covered
 - For each EPA identification number, a description and listed quantity of each hazardous waste received during the year covered
 - Method of disposal for each hazardous waste
 - The most recent closure and post-closure cost estimate prepared as required by regulations
 - Certification signed by Ford Motor Company or an authorized representative
- Unmanifested waste will be reported within 15 days after receiving the waste, to the DNR Director, unless the waste is excluded from the manifest requirements set forth by Part 111 of Michigan's Act 451 R299.9205. An unmanifested report shall be submitted on an approved form (by the Director) and shall include:
 - EPA identification number, name and address of the facility
 - Date the facility received the waste
 - EPA identification number, name and address of the generator and transporter, if available
 - Method of disposal for each hazardous waste
 - Certification signed by Ford Motor Company by an authorized representative
 - Brief explanation of why the waste was not manifested, if known
- A monthly report shall be submitted to the Director, on forms provided by the Director, which summarizes all managed hazardous waste disposed of, including the hazardous waste number of the waste, quantity, and method and date of disposal. This report will be submitted within 10 days after the end of each month.
- All reports will be signed and certified in accordance with 40 CFR 270.11.

ATTACHMENT 9A

GENERAL DAILY INSPECTION SCHEDULE AND CHECKLIST

ATTACHMENT 9A

RCRA Daily Inspection Ford Allen Park Clay Mine Landfill (Monday Through Friday)

Date: _____
Time: _____

Inspector (initials): _____

Inspection Items	Acceptable	Not Acceptable	Comments (see below)
Proper Disposal Ensure that proper wastes are unloaded and landfilled in the proper location.	_____	_____	_____
Gate Security Ensure the proper functioning of the gate and lock.	_____	_____	_____
Access Road Inspect the road for repairs, proper cleaning or dust suppression.	_____	_____	_____
Warning Signs Ensure that appropriate warning signs are visible.	_____	_____	_____
Storm Water Ensure that storm water collected in the inactive areas does not come in contact with active work areas. Inspect integrity of diversion berms in the cell in order to maintain separation of active from inactive work areas. Inspect run-on and run-off diversion berms and dikes for erosion or general damage that would allow water into the waste management area.	_____ _____ _____	_____ _____ _____	_____ _____ _____
Leachate System Inspect, record, and sample the following system components. Ensure pump system switching mechanisms operable Ensure pumps and ancillary equipment operable—event recorder, chart paper changed, pens (as needed) Verify liquid levels in sump, record level. Ensure pump system Control Panel operable. Monitor secondary containment of the primary leachate holding tank. Monitor leachate volume, check electronic monitoring of the primary leachate holding tank. Inspect discharge lines for damage (clean-outs), liquid in annular pipe space. Inspect sampling manhole for proper flow recording.	_____ _____ _____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____ _____ _____
Truck Wheel Wash Ensure pump/nozzle operability. Inspect pit and sludge box, record sludge levels	_____ _____	_____ _____	_____ _____
Ensure Bulldozer is Operable	_____	_____	_____
Ensure Telephone is in Working Order	_____	_____	_____
Ensure 2-way radios located on all landfill equipment are in working order	_____	_____	_____

Please record the date and nature of any repairs or remediation.

Comments: _____

ATTACHMENT 9B

GENERAL WEEKLY INSPECTION SCHEDULE AND CHECKLIST

ATTACHMENT 9B

RCRA Weekly Inspection Ford Allen Park Clay Mine Landfill

Date: _____

Inspector (initials): _____

Time: _____

Inspection Items	Acceptable	Not Acceptable	Comments (see below)
Fire Extinguishers Inspect for existence and check pressure gauges.	_____	_____	_____
Respiratory Protection Equipment Check for availability and insure proper storage.	_____	_____	_____
Perimeter Fence Inspect integrity.	_____	_____	_____
Surface Drains Inspect for breakage and visible surface water impacts.	_____	_____	_____
Sediment Basin Inspect outflow for blockage and visible surface water impacts.	_____	_____	_____
Leak Detection Systems	_____	_____	_____
Inspect, record, and sample the following system components:	_____	_____	_____
• Ensure pump system switching mechanisms operable	_____	_____	_____
• Ensure pump and ancillary equipment is operable	_____	_____	_____
• Ensure pump control panel is operable	_____	_____	_____
• Verify liquid levels in sump, record level	_____	_____	_____
• Record amount of liquid removed from leak detection system	_____	_____	_____
• Inspect discharge lines for damage (clean-outs), liquid in annular pipe space.	_____	_____	_____
Air Samplers Inspect all samplers to ensure proper operation.	_____	_____	_____

Please record the date and nature of any repairs or remediation.

Comments: _____

ATTACHMENT 9C

GENERAL QUARTERLY INSPECTION SCHEDULE AND CHECKLIST

ATTACHMENT 9C

RCRA Quarterly Inspection Ford Allen Park Clay Mine Landfill

Date: _____

Inspector (initials): _____

Time: _____

Inspection Items	Acceptable	Not Acceptable	Comments (see below)
Environmental Monitoring System			
Piezometers Inspect integrity of surface seals, protective casings including caps and locks	_____	_____	_____
Sedimentation Basin Check sampling location condition	_____	_____	_____
Leak detection system Inspect riser pipe condition including caps and lock	_____	_____	_____
Soil monitoring locations Check sampling location condition	_____	_____	_____
Lysimeter Inspect integrity of surface seals, protective casing including caps and locks	_____	_____	_____
Leachate Monitoring Inspect leachate sump for caps and locks Inspect dedicated bailer for operation & general condition	_____ _____	_____ _____	_____ _____
Surface Water Check sampling location condition	_____	_____	_____
Final Cover Inspect all areas which have received final cover for deep-rooted vegetation, deterioration of vegetative cover, areas of surface erosion, and other surface disturbances.	_____	_____	_____
Fire Hydrant Inspect for vandalism.	_____	_____	_____

Please record the date and nature of any repairs or remediation.

Comments: _____

ATTACHMENT 9D

JOB DESCRIPTIONS, TRAINING REQUIREMENTS, AND TRAINING COURSE OUTLINE

**Operations Functions, Duties, Skills, and Qualifications
(TSCA/Solid Waste Operations)**

POSITION TITLE: General Manager

BASIC FUNCTION:

Manage a safe and efficient hazardous waste disposal operation with direct responsibilities for sales and customer service, finance and administration, training and safety, site operations, transportation, maintenance, permitting, EPA and state relations and public and community relations.

PRINCIPAL RESPONSIBILITIES:

1. Directs operations activities of the facility to achieve budgeted goals.
2. Directs and organizes activities of facility supervisors and reviews the performance.
3. Responsible for permitting and licensing, in conjunction with Ford Motor Company.
4. Sets and administers company policies consistent with the Policies and Procedures Manual.
5. Assures compliance with safety and environmental regulations and with internal quality assurance procedures.
6. Responsible for employee relations and morale.
7. Maintain relationships with regulator agencies.
8. Monitor all sales and customer relations.
9. Maintain good public relations with the local community.
10. Maintain high enthusiasm and standards for safety, quality control and loss control.
11. Ascertain employee training needs and implement programs to accomplish training goals.
12. Adhere to corporate financial controls.
13. Interface with corporate staff for proper operation and design of site.
14. Supervise engineering support departments.
15. Design site projects.

POSITION DIMENSIONS:

- B.S. degree in chemistry, engineering, business administration, or equivalent work experience.
- Minimum five years practical experience in waste management, engineering, or chemical industry operations.

- Minimum five years supervisory and management experience.
- Skills in employee relations, customer relations and community relations.
- Excellent verbal and written communication skills.
- Excellent organizational skills.

Required Training Selections

- **Work Area Description and Relationship to the Facility**
 - Site operating permit Part B
 - Overview of processing and drum storage
 - CWM/WMI Policies and Directives
- **Work Area Right to Know**
 - Overview of site hazard communications and lab safety procedures
- **Job-Specific Process/Equipment/Vehicle Inspection, Operation, Shutdown (normal and emergency) and Routine Maintenance**
 - Standard division practices, operations, drum warehouse
- **Phase I Job-Specific Regulatory Compliance Training (e.g., manifest entries, W.A.P., site inspection, mapping)**
 - Site operating permit Part B
 - Sewer discharge permit
 - RCRA Regulations (Federal and State)
- **Special Skills Training**
 - Emergency shutdown procedures
 - Casualty control team responsibilities
 - Emergency notification procedures

**Operations Functions, Duties, Skills, and Qualifications
(TSCA/Solid Waste Operations)**

POSITION TITLE: Operations Manager

BASIC FUNCTION:

Manage a safe and efficient disposal operation with direct responsibilities for customer service, training and safety, site operations, maintenance, permitting, EPA and state relations, and public and community relations.

SPECIFIC DUTIES AND RESPONSIBILITIES:

1. Direct operations activities of the facility to achieve budgeted goals.
2. Responsible for emergency response coordination.
3. Ascertain employee training needs and implement programs to accomplish training goals.
4. Maintain high enthusiasm and standards for safety, quality control and loss control.
5. Assure compliance with safety and environmental regulations and with internal quality assurance procedures.
6. Responsible for employee relations and morale.
7. Direct work projects for facility improvements and maintenance.
8. Supervise all waste treatment and disposal operations.
9. Schedule and supervise hourly production personnel.
10. Ensure efficient operation of processes, meeting all environmental and quality control parameters.
11. Ensure that permit limitations are adhered to.
12. Interface with Facility Service Manager.
13. Conduct training of area personnel.
14. Supervise specialty activities, such as tank cleaning.
15. Responsible for enforcement of site safety policies.
16. Responsible for assignment of work to "A" and "B" Operators.
17. Knowledge of various lab procedures and specifications related to work performed.
18. Perform other related duties as assigned.

SKILLS, EDUCATION AND QUALIFICATIONS REQUIRED: (Indicate the skills, education, experience and qualifications required for this position.)

1. B.S. degree in chemistry, engineering, or equivalent.
2. Minimum five years practical experience in waste management, engineering, or disposal industry operations.
3. Minimum five years supervisory and management experience.
4. Skills in employee relations, customer relations, and community relations.
5. Excellent verbal and written communication skills.
6. Excellent organizational skills.

Required Training Selections

- **Work Area Description and Relationship to the Facility**
 - Site operating permits
 - Overview of processing
 - CWM/WMI/Ford Directives
 - Effective supervision programs
- **Work Area Right to Know**
 - Acids and bases, toxic materials, oxidizers, and organic materials.
 - Labelling of pipes, valves, and equipment
- **Area-Specific Personal Protective Equipment Care, Use and Limitations That Expands Upon the General Training**
 - Body protection, i.e. rain suits, tyveks
 - Respiratory protection, i.e. air purifying and air supplied respirators
 - Face protection, i.e. goggles and face shields
 - Gloves and boots
- **Job-Specific Process/Equipment/Vehicle Inspection, Operation, Shutdown (Normal and Emergency) and Routine Maintenance**

Standard Division Practices Operations -

 - Liquid tank farms
 - Reactors, scrubbers, and heat exchangers
 - Filter press operations
 - Sample collection procedure
 - Daily start up and shut down procedures
- **Training in the Key Parameters For Any Automatic Waste Feed Cut-off Systems Used On-site**
 - Liquid tank farms
 - Reactors

- **Phase I Job-Specific Regulatory Compliance Training (e.g., manifest entries, W.A.P., site inspection, mapping)**
 - Sewer discharge permit requirements
 - Sample collection procedures
 - Recordkeeping requirements
 - Requirements for use of containers/roll-offs
 - Requirements for use of tanks/containment
- **Job-Specific Materials Handling (select required training for the position)**
 - Vehicle loading/unloading
 - Containers/sumps
 - Roll-off trucks
 - Box vans
 - Lockout/tagout
 - Heavy equipment operation
 - Forklift operation
 - Confined space entry
- **Special Skills Training**
 - CPR/First Aid (selected employees)
 - Emergency shutdown procedures
 - Casualty control team responsibilities
 - Emergency notification procedures

**Operations Functions, Duties, Skills, and Qualifications
(TSCA/Solid Waste Operations)**

POSITION/TITLE: Equipment Operator - Class A

BASIC FUNCTION:

Operates without direct supervision, all waste treatment, processing, and disposal equipment.

SPECIFIC DUTIES AND RESPONSIBILITIES:

- A. Responsible for operating the following equipment:
 - 1. Truck unloading
 - 2. Reactors, scrubbers
 - 3. Filter presses
 - 4. Pumps
 - 5. Fork lift trucks
 - 6. Dozers
 - 7. Excavator
 - 8. Loader
 - 9. Backhoe
 - 10. Pit truck
 - 11. Other processing equipment
- B. Responsible for inspection and adjustments of equipment and instrumentation as required.
- C. Responsible for waste placement, transfers, and processing.
- D. Possesses knowledge of chemical handling techniques, required safety precautions, and emergency responses.
- E. Performs material handling tasks.
- F. Takes samples required for QC tests.
- G. Performs minor repairs to equipment.
- H. Performs other related duties as assigned.

SKILLS, EDUCATION AND QUALIFICATION:

- A. High school degree or equivalent
- B. Able to write and read English accurately (capable of filling out and following tracking sheets, etc.)
- C. Good manual dexterity.
- D. Possesses knowledge of all operating procedures within assigned area.
- E. Pass a qualifying test, if required.

**Operations Functions, Duties, Skills, and Qualifications
(TSCA/Solid Waste Operations)**

POSITION TITLE: Equipment Operator - Class B

BASIC FUNCTION:

- A. With direct supervision operates the following equipment:
 - 1. Truck unloading
 - 2. Reactors, Scrubbers
 - 3. Filter Presses
 - 4. Pumps
 - 5. Fork Lift trucks
 - 6. Dozers
 - 7. Excavator
 - 8. Loader
 - 9. Backhoe
 - 10. Pit truck
 - 11. Other processing equipment
- B. Performs inspection and adjustments of equipment and instrumentation as directed.
- C. Makes waste transfers and carries out disposal operations and reactions as directed.
- D. Possesses knowledge of chemical handling techniques, required safety precautions, and emergency responses.
- E. Performs material handling tasks.
- F. Takes samples required for QC tests.
- G. Performs minor repairs to equipment.
- H. Performs other related duties as assigned.

SKILLS, EDUCATION AND QUALIFICATIONS REQUIRED:

- A. High school degree or equivalent.
- B. Able to write and read English accurately (capable of filling out and following batch sheets, etc.)
- C. Good manual dexterity.
- D. Capable of learning all operating procedures within assigned area.
- E. Pass a qualifying test if required.

Required Training Selections

- **Work Area Description and Relationship to the Facility**
 - Site operating permits
 - Overview of processing
 - CWM/WMI/Ford Directives
- **Work Area Right to Know**
 - Toxic materials, oxidizers and organic materials
- **Area-Specific Personal Protective Equipment Care, Use and Limitations That Expands Upon the General Training**
 - Body protection, i. e. rain suits, tyveks
 - Respiratory protection, i.e. air purifying and air supplied respirators
 - Face protection, i.e. goggles and face shields
 - Gloves and boots
- **Job-Specific Process/Equipment/Vehicle Inspection, Operation, Shutdown (Normal and Emergency), and Routine Maintenance**

Standard Division Practices Operations -

 - Liquid tank farms (treated and untreated)
 - Reactors, scrubbers, and heat exchangers
 - Filter press operations
 - Sample collection procedure
 - Daily start up and shut down procedures
- **Training in the Key Parameters For Any Automatic Waste Feed Cut-off Systems Used On-site**
 - Liquid tank farms
 - Reactors
- **Phase I Job-Specific Regulatory Compliance Training (e.g., manifest entries, W.A.P., site inspection, mapping)**
 - Sample collection procedures
 - Record keeping requirements
 - Requirements for use of containers/roll-offs
 - Requirements for use of tanks/containment
- **Job-Specific Materials Handling (select required training for the position)**
 - Vehicle loading/unloading
 - Containers/sumps
 - Roll-off trucks
 - Box vans
 - Lockout/tagout

- Heavy equipment operation
- Forklift operation
- Heavy equipment operation
- Confined space entry

- **Special Skills Training**

- CPR/First Aid (selected employees)
- Emergency shutdown procedures
- Casualty control team responsibilities
- Emergency notification procedures

**Operations Functions, Duties, Skills, and Qualifications
(TSCA/Solid Waste Operations)**

POSITION TITLE: Facility Service Manager

BASIC FUNCTION:

Manages and directs Customer Service: order entry, order editing, order pricing, order scheduling, customer inquiry, liaison with the field sales force and the accounting department and other CWM sites.

SPECIFIC DUTIES AND RESPONSIBILITIES:

- A. Schedule all material in and out of plant.
- B. Resolve all customer problems. Coordinate with Lab, Production and Transportation where necessary.
- C. Respond to inquiries about the site, general and specific.
- D. Resolve off-spec receipts.
- E. Price all new waste streams and prepare contracts.
- F. Manage and coordinate flow of decision packages through site approval process.
- G. Interface with Regional Sales personnel.
- H. Prepare weekly sales projections and special reports.

SKILLS, EDUCATION AND QUALIFICATIONS REQUIRED:

- A. Bachelor's degree with background in business, sales or marketing - or equivalent experience.
- B. Excellent communications skills.
- C. Experience in customer relations.

**Operations Functions, Duties, Skills, and Qualifications
(TSCA/Solid Waste Operations)**

POSITION TITLE: Laboratory/Technical Manager

BASIC FUNCTION:

Supervises laboratory chemists and technicians and manage the chemical laboratory. Perform laboratory testing and sampling of waste on-site. Responsible for implementation and maintenance of the facility's waste analysis plan.

SPECIFIC DUTIES AND RESPONSIBILITIES:

- A. Review waste analysis and execute decisions allowing for waste receipt.
- B. Develop and implement procedures to manage all technical aspects of hazardous waste receipts and treatment to ensure safety and compliance with all company policies and procedures.
- C. Responsible for sampling and testing of incoming waste and waste on-site as required for regulatory or company policy.
- D. Profile and obtain approvals for site generated waste.
- E. Respond to external and internal technical inquiries.
- F. Maintain records of all sampling and testing activities.
- G. Assist in the development of chemical safety and handling procedures for all waste. Provide training to site personnel on general chemistry and waste handling precautions.
- H. Responsible for policies and procedures B-900 management and compliance.
- I. Prepare and submit reports for compliance with State and Federal regulations.
- J. Supervise the lab technician.
- K. Develop and supervise the laboratory quality control program.
- L. Maintain current knowledge of the State and Federal regulations as they apply to the facility.
- M. Perform related duties as necessary.
- N. Establish analysis priorities to ensure that site needs are met.

SKILLS, EDUCATION AND QUALIFICATIONS REQUIRED:

- A. Requires 3 years analytical laboratory experience.
- B. Familiarity with RCRA, TSCA, and Solid Waste regulations.
- C. Have the ability to supervise and direct lab activities.
- D. Minimum of BS degree in chemistry or related technical field experience.

**Operations Functions, Duties, Skills, and Qualifications
(TSCA/Solid Waste Operations)**

POSITION TITLE: Office Manager

BASIC FUNCTION:

Responsible for managing office including the ticket window function for the facility.

SPECIFIC DUTIES AND RESPONSIBILITIES:

- A. Coordinates typing, dictation, word processing services - memos, letters, reports, procedures as requested.
- B. Organizes filing systems for easy retrieval of information.
- C. Supervises scheduling of conferences, meetings, and travel arrangements.
- D. Assists in telephone calls.
- E. Assists General Manager as requested.
- F. Running and distribution of monthly accounting reports and individual plant reports.
- G. Create requested Ford Reports as needed.
- H. ICBA tracking.
- I. Control office inventory and supply purchasing.
- J. Assures ticket window is properly staffed.
- K. Maintain weekly payroll and related personnel records.
- L. Maintain petty cash and postage funds.
- M. Electronic Mail of incoming and outgoing for office staff.
- N. Prepare outbound Federal Express packages and other outgoing mail.
- O. Maintain and track APETS (purchase orders).
- P. Assists in environmental compliance reports.

SKILLS, EDUCATION AND QUALIFICATIONS REQUIRED:

- A. Minimum three years office supervisory experience.
- B. Good verbal and written communication skills.

**Operations Functions, Duties, Skills, and Qualifications
(TSCA/Solid Waste Operations)**

POSITION TITLE: Receptionist/Typist

BASIC FUNCTION:

Responsible for answering phone and assigned typing.

SPECIFIC DUTIES AND RESPONSIBILITIES: (This list is not intended to be all encompassing and other duties may be assigned.)

- A. Answer phone - answer in a friendly and cordial manner. Provide assistance to all callers and direct calls to proper individuals. Take messages and place in respective in-boxes at end of day, if not picked up by any individual.
- B. Mail - Sort mail for distribution. Received checks will be endorsed (stamped) individually and recorded on the Receipt/Control Log - daily. Postage stamp all outgoing mail. Prepare outbound Federal Express packages and direct received packages, promptly to proper individuals.
- C. Typing - Handle assigned typing and the prepare files on a daily basis. Correspondences should be channeled through Office Manager General Manager.
- D. Maintain organized filing system.
- F. Provide data input for environmental reports.
- G. Track remedial work orders on computer spread sheet.

SKILLS, EDUCATION AND QUALIFICATIONS AS REQUIRED:

- A. High School Diploma or Equivalent with two to five years of related experience.
- B. Good verbal and communication skills.
- C. Typing required.
- D. Knowledge of WordPerfect and Lotus 1-2-3 preferred.

**Operations Functions, Duties, Skills, and Qualifications
(TSCA/Solid Waste Operations)**

POSITION TITLE: Scheduling/Receiving Clerk

BASIC FUNCTION:

Receives incoming bulk waste streams, prepares the unloading paperwork, processes the manifest as required by CWM and governmental regulations and performs data entry.

SPECIFIC DUTIES AND RESPONSIBILITIES:

RECEIVING

1. Fill out unloading slip
2. Fill out lab sample label
3. Check manifest for correct/necessary information
4. Sign manifest for driver's release from the site

MANIFEST PREPARATION

1. Make copies of manifest and pump slip for billing
2. Assemble manifest packet for environmental department
3. Separate manifest for State, Generator, and Generator's state,
4. Mail manifest

COMPUTER ENTRY

1. New Profiles into DCS
2. Generic waste stream record
3. Daily customer scheduling into DCS
4. Daily customer receiving into DCS
5. Print receipt ticket

Performs other related duties as assigned.

SKILLS, EDUCATION AND QUALIFICATIONS REQUIRED:

- A. High school diploma or equivalent with one to three years of related experience.
- B. Good verbal and written communication skills.
- C. Good organizational skills. Ability to use PC helpful.

FORD ALLEN PARK CLAY MINE LANDFILL TRAINING MATRIX

Personnel	Training Requirements*														
	Emergency Plans & Procedures	Waste Receipt	Waste Identification	Recordkeeping	Inspection Procedures	Environmental Regulations	Fill and Grading Plan	General Site Health and Safety	Use of PPE	Medical Surveillance	Decontamination Procedures	Confined Space Entry Procedures	HAZCOM Requirements	DOT Requirements	Emergency Response
General Manager	X	X	X		X	X	X	X	X	X	X		X	X	
Operation Manager	X	X	X		X	X	X	X	X	X	X		X	X	
Equipment Operator	X		X		X	X	X	X	X	X	X		X	X	
Technical Manager	X	X	X		X	X		X	X	X	X		X		
Office Manager	X		X					X	X	X	X		X		
Customer Service Rep.	X		X					X	X	X	X		X		
Receiving Personnel	X	X	X	X	X	X		X	X	X	X		X	X	
Utility Operator	X	X	X	X	X	X	X	X	X	X	X		X	X	
Contractors	X		X					X	X	X	X	X	X		X

NOTES:

- * - New employees will be trained within 6 months of hire date
- All employees will receive continual training in their respective area of responsibility
- Training shall consist of classroom as well as on-the-job training

005 Overview: Safety Hazards of Working with Hazardous Wastes
Instructional Outline

Topics

1. Physical Properties of Chemicals
 - a. Physical states: solid, liquid, gas, vapor.
 - b. Organics and inorganics - solvents, etc.
 - c. Acids and bases - pH
2. Incompatible chemicals - problems with mixing
 - a. Release of noxious gases: e.g., cyanide, H_2S
 - b. Release of heat - concentrated acids and bases
 - c. Other examples - MDOL/SET list
3. Storage and labeling - applies to all containers - large or small
 - a. Proper identification of contents - keep in original container whenever possible
 - b. Store in proper area: e.g., flammables, incompatibles, corrosives
 - c. Other considerations - don't stack too high to present handling difficulty; leakage problems; aisles between; containment provisions
4. Materials handling -
 - a. Housekeeping
 - b. Proper lifting techniques
 - c. Drum handling
 - d. Lift trucks
 - e. MDOL/SET '5 minute safety talks'
5. Controls - Engineering controls and Personal Protective Equipment
 - a. Hazards Recognition
 - 1) Falling
 - 2) Striking
 - 3) Being caught
 - 4) Contact injuries
 - 5) Breathing in harmful atmospheres
 - b. Other - machine guarding, blind corners, barricade, construction
6. Fire Safety
 - a. Prevention - housekeeping; call list; disaster plan
 - b. Theory - fire triangle; flash point; L.E.L.; U.E.L.; extinguishment principles
 - c. Equipment - blanket; extinguisher use - CO, CO_2 , dry chemical
7. Confined Space Entry - Definition
 - a. Legal - MIOSHA rules
 - b. Hazards awareness - CO, CO_2 , toxic gases, flammables
 - c. Atmosphere testing - NO_2 and L.E.L.; meters; toxic gas sampling; ventilation area
 - d. Victim rescue and equipment for safe entry
8. First Aid - Immediate action -
 - a. Prevention and Readiness - first aid rules and kits
 - b. Procedures - immediate flushing, call list
 - c. Equipment - drenching showers, eye washes
 - d. Chronic - dermatitis prevention

Resources

1. Handout - Employee Safe Work Manual - Dray Publishing Co.
2. Chart - Flammable liquid chart

SECTION 10
CONTINGENCY PLAN

TABLE OF CONTENTS

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List of Attachments

Attachment 10A	Site Plan
Attachment 10B	Logic Diagram on Emergency Response Procedures
Attachment 10C	Action Leakage Rate Calculations
Attachment 10D	Correspondence with Local Authorities
Attachment 10E	Typical Notification Letter

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SECTION 10

CONTINGENCY PLAN

10.1 General Information

The Contingency Plan will be reviewed and immediately amended, as necessary, whenever:

- The facility RCRA permit is revised.
- The plan fails in an emergency.
- The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes in the response necessary in an emergency.
- The list of emergency coordinators change.
- The list of emergency equipment changes.
- Applicable State (Part 111 of Act 451) or Federal (RCRA) standards or regulations are changed requiring a change in the Contingency Plan.

A copy of the Contingency Plan and all revisions will be maintained at the facility and will be submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.

10.2 Site Information

The hazardous waste disposal facility consists of 16.5 acres in the northeast corner of the site as shown on the site plan (Attachment 10A). The site address is 17005 Oakwood Boulevard, Allen Park, Michigan 48101, and the site mailing address is Ford Motor Company, Environmental Control Office, 15201 Century Drive, Suite 608, Dearborn, Michigan 48120.

Waste types to be disposed at the facility are found in the Section 1 - MDNR Application Form.

10.3 Emergency Coordinators (In Order of Priority)

1. *David A. Knutson, Site Manager/Manager Trainee*
Office: Waste Management, Inc. Home: 1759 Cole Street
17005 Oakwood Blvd. Birmingham, MI 48009
Allen Park, MI 48101 810-646-7808
313-390-3209

2. *Jeffrey L. Hartlund P.E., Facility Environmental Control Engineer*
Office: Ford Motor Company Home: 944 Kings Way
15201 Century Drive Canton, MI 48188
Suite 602 313-981-8938
Dearborn, MI 48120
313-322-0700
3. *David S. Miller, Principal Facility Environmental Control Engineer*
Office: Ford Motor Company Home: 3601 Elizabeth
15201 Century Drive Ann Arbor, MI 48104
Suite 602 313-662-4435
Dearborn, MI 48120
313-322-3761
4. *Jerome S. Amber P.E., Manager, Site Management and Investigation*
Office: Ford Motor Company Home: 1610 Hanley Court
15201 Century Drive Birmingham, MI 48009
Suite 608 313-258-6714
Dearborn, MI 48120
313-322-4646
5. *David O'Connor*
Office: Ford Motor Company Home: 30846 Bobrich
Room 108 Livonia, MI 48152
Construction Services Bldg. 313-513-2178
3001 Miller Road
Dearborn, MI 48121
313-594-1014

The primary Emergency Coordinator is at the facility during working hours. The backup Coordinators are located at facilities within 5 to 10 minutes of the site.

10.4 Implementation of Response Procedures

In the event of fire, explosion or accidental materials release, response activities are initiated following evaluation of the event. An assessment of the situation is performed immediately by the Emergency Coordinator, or his designee. Response activities are directed as appropriate and the decision is made whether or not to implement the Contingency Plan, based on the threat to human health or the environment.

10.4.1 Incident Assessment and Decision Process

A logic diagram of initial response activities leading implementation of the Contingency Plan is shown in Attachment 10B. Should the release be of a minor or controllable nature, which presents no potential hazard to human health or the environment, the

Emergency Coordinator may implement the post-emergency procedures described in Subsection 10.6 and complete the necessary reporting, described in Subsection 10.5.

In case of an imminent or actual emergency situation, the person observing the incident will activate the incident warning system to notify facility personnel. The individual will notify others in the immediate area by hand and voice signals.

Communication systems are provided at each active area at the site. At a minimum, the warning system consists of a two-way radio and/or telephone and an emergency evacuation alarm. All employees are trained to use the two-way radio where this is the primary communication system. Emergency telephone numbers are posted in buildings where employees may be present.

The person nearest the communication system at the time the hand and/or voice signal is sounded will radio or phone the facility Emergency Coordinator and report his/her name, location, and nature and extent of the incident. In the event the Emergency Coordinator is not at the facility, the area supervisor will immediately notify the designated Emergency Coordinator (or his alternate).

The Emergency Coordinator will set-up a command post and take control of the affected area and any resources necessary until the emergency has been eliminated and necessary clean-up or restoration is completed.

All personnel will have been trained to respond to emergencies and to implement emergency procedures. New employees are trained prior to their working on-site. Emergency response and procedures are reviewed during annual training sessions with employees. Training includes the use of the emergency alarm/communication system (i.e., how to use two-way radios, who to contact, location of emergency numbers, etc.).

The Emergency Coordinator will direct the following activities:

- Where applicable, see that processes and/or operations are stopped, and that any released waste is contained and collected in order to ensure fires or explosions do not occur or spread.
- Determine the source and extent of the release materials and assess the direct and secondary hazards.

- See that any materials released from the incident are isolated from other incompatible materials.
- Activate and direct the Contingency Plan activities pursuant to procedures in Subsection 10.6, as necessary.

10.5 Emergency Contracts and Notification Procedures

Any unplanned release of hazardous waste to the soil, air, or surface water at the facility which could threaten human health or the environment would warrant implementation of this plan, as well as any condition that if not corrected, might cause such a release. The emergency coordinator(s) listed above should be contacted if the plan must be implemented. Additional emergency numbers for locally available help are provided as follows:

EMERGENCY CONTACTS

All emergencies	911
Ford Plant Security	313-322-3211
Allen Park Fire Department	313-386-7800
Allen Park Police Department	313-386-7800
Wayne County Sheriff	313-224-2222
Michigan State Police	313-256-9636
E.M.S. (Taylor)	313-292-7820
Pollution Emergency Alerting System (MDNR)	1-800-292-4706
Wayne County Emergency Management Division	313-942-5289
MDNR Emergency Response Center (PEAS)	1-800-292-4706
U.S. Coast Guard/National Emergency Response Center	1-800-424-8802

HOSPITAL EMERGENCY NUMBERS

Oakwood Hospital	313-593-7440
Vencore Hospital, Detroit	313-386-2000
Regional Poison Control Center	313-745-5711

The person reporting the situation to the Emergency Coordinator should give the following information:

1. All circumstances known to exist which may affect emergency actions to be taken.
2. Name of person reporting conditions.
3. Location of problem area within the facility.
4. Time of the incident occurring, if known.

5. Type of materials involved, if known.
6. Any injuries to personnel or damage to equipment that have occurred.
7. All actions taken, so far, to prevent further harm to human health or the environment.
8. How incident occurred, if known.
9. Request time of arrival for Emergency Coordinator at incident site and any further instructions for actions in the interim.

10.6 Identification of Emergency Response Actions

The Emergency Coordinator will immediately identify the character, source, extent of the release. The initial identification method will be to utilize visual analysis of the material and location of the release. He may also review facility records such as manifests and waste profiles and, if necessary, utilize chemical analysis for identification of the material. Any wastes known or suspected to be involved in a release will be sampled (bottles available in manifest trailer).

Upon receiving a call from facility personnel that an emergency condition exists, the Emergency Coordinator shall evaluate steps to be taken from the information reported and give instructions as required. The Coordinator should then immediately proceed to the site, to conduct the following:

1. Assess extent of emergency.
2. Contact appropriate emergency support agencies if needed.
3. Take precautions to prevent spreading of a spill or fire to other areas.
4. Remove non-employees, and non-essential employees from incident area, particularly during operating hours.
5. Assemble all personnel at the operations office for instructions and personnel count. Direct personnel in responding to the incident, if appropriate, or wait for outside emergency personnel and assist in their containment efforts.
6. Prevent additional traffic from entering incident area.
7. Clear road(s) for emergency vehicles and equipment.
8. Contact the "hazardous waste checker" if on duty, or check the waste inventory log for information on wastes in the incident area to determine the

potential hazards such as toxic, irritating or asphyxiating gases generated as a result of the fire or explosion.

9. In the event of fire, consider smoke a visibility hazard on I-94 or Southfield Freeways and advise the State Police personnel for action.
10. If there is a fire, explosion, or other release of hazardous waste or hazardous waste constituents that could threaten human health or the environment, or if a spill has reached surface water or groundwater, the Michigan Department of Natural Resources will be notified in accordance with R299.9607.
11. If a reportable quantity of material has been released, or if there is a release, fire, or explosion which could threaten human health or the environment outside of the facility boundary, the Emergency Coordinator, or his designee, will contact the National Response Center (800-424-8802) and the MDNR and report the following:
 - a. Name and phone number of reporter
 - b. Name and address of facility
 - c. Time and type of incident
 - d. Name and quantity of material involved, to the extent known
 - e. The extent of injuries if any
 - f. Possible hazards to human health, or the environment, outside the facility
12. Immediately after an incident, make an assessment to determine the need for disposing of recovered waste, impacted soil or surface waters or any other material that results from release, fire, or explosion at the facility. (Assume materials are hazardous).
13. The Emergency Coordinator must ensure that, in the affected area(s) of the facility:
 - a. No waste that may be incompatible with the released materials is treated, stored, or disposed of until cleanup procedures are completed.
 - b. All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.
14. The owner and operator must notify the Regional Administrator, and appropriate State and local authorities, that the facility is in compliance with applicable requirements before operations are resumed in the affected area(s) of the facility.
15. The required report after implementation of the Contingency Plan must be submitted to the Director of Michigan Department of Natural Resources.

Summary reports and details of all incidents that require implementation of the contingency plan are to be kept in the facility operating notebook.

10.7 Landfill Leakage

If liquid is detected in the leak detection system or lysimeter monitoring system, the liquid will be analyzed according to each respective environmental monitoring program. If a statistically significant increase in the concentration of analyzed parameters is detected, in accordance with the provisions of the monitoring programs, the following procedure shall be implemented whenever an immediate resampling confirms the statistically significant increase:

- Notify the Director of the MDNR immediately by calling the Chief of the Waste Management Division of the MDNR and follow-up in writing within seven days.
- Begin immediate action to implement the current contingency plan.
- Within 30 days, determine the cause of the increases in the concentration of the parameters and whether failure has occurred in the liner system.
- Provide the Chief of the Waste Management Division of the MDNR or his designee, with weekly telephone updates and written reports every two weeks regarding the progress to date in determining the cause of the increase in the concentration of the parameters and the results of all samples from environmental monitoring conducted by the licensee.

The USEPA specifies a maximum Action Leakage Rate (ARL) of 100 gpad. If the site design does not allow for an ARL of 100 gpad, the ARL is the maximum leakage rate allowed by the design of the Leak Detection System. Calculations justifying an ARL of 100 gpad are included in Attachment 10C. If leakage rates are noted in excess of the ARL, Ford will begin steps to identify potential sources of excessive flow in the Leak Detection System.

10.8 Emergency Equipment and Power Sources

Fire Extinguishers:

There are 8 located throughout the wheel wash building (i.e., carbon dioxide extinguishers for Class B [flammable liquids and grease] and Class C [electrical equipment] fires; water extinguishers for Class A [trash, wood and paper] fires and; dry chemical extinguishers for Class A, B and C fires). There are 2 additional extinguishers located in the operations office. Fire extinguishers are also located inside each facility vehicle.

Telephone:

Located at the wheel wash building and within the operations office

Eye Wash:	Located at the wheel wash building
First Aid Kit:	Located in the bathroom of the wheel wash building and in the operations office
Fire Hydrant:	Located at the entrance gate off Oakwood Boulevard
Electrical Power:	Outlets located in wheel wash building and operations office and at the 4 air monitoring stations
Misc. Mobile Equipment:	Available at the Ford Rouge Plant (313-322-7792) upon request (e.g., front endloaders to move materials, a vacuum truck to clean asphalt drive, bulldozers to push piles of materials, water truck to spray roads, etc.). Additional equipment is available from local suppliers
Shower:	Located in supply room of wheel wash building
Portable 2-Way Radios:	2-way radios are issued to each field crew member

10.9 Arrangements with Local Authorities

As required under 40 CFR 264.37, letters were sent to the local authorities on November 11, 1981. The response of the local authorities is included in Attachment 10D. Typically, most local agencies declined to participate (documented in accordance with 40 CFR 264.37(b)). Ford Motor Company Rouge Plant Security is available for any emergency help as may be needed.

Following the MDNR's renewal of the operating license, a letter (shown in Attachment 10E) will be sent to the local authorities to again inform them of the facility and to involve them in the Contingency Planning process. Local authorities to be contacted include those identified in paragraph A11.5 of this section (or their successors). The responses by the local authorities will be maintained in the facility operating record.

10.10 Evacuation Procedures

The facility is an open field whereby specific evacuation routes and emergency aisle space are not required. Portable 2-way radios are utilized as an internal communication system to initiate evacuation procedures. The primary route of evacuation is the main gate. Secondary routes of evacuation include gates along the perimeter fencing. Supervisors on-site will have a copy of the key to the gates around the site to allow evacuation in the event of an emergency where the primary evacuation route is not suitable. If the emergency evacuation is due to airborne hazards then the evacuating personnel should avoid the downwind areas.

In the event an evacuation is deemed necessary, an alarm system shall be activated to alert site personnel. Employees will evacuate away from deleterious areas, exit at the main gate, or at the west side sampling gate (see Attachment 10A), and assemble at the front gate for a head count. The guard will have the sign-in log and ancillary information necessary to verify the head count.

10.11 Required Reports

The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the Contingency Plan. Within 15 days after the incident, he must submit a written report on the incident to the U.S. EPA Regional Administrator. The report must include:

- Name, address, and telephone number of the owner and operator.
- Name, address, and telephone number of the facility.
- Date, time, and type of incident (e.g., fire, explosion, etc.)
- Name and quantity of material(s) involved.
- The extent of injuries, if any.
- An Assessment of actual or potential hazards to human health or the environment, where this is applicable.
- Estimated quantity and disposition of recovered material that resulted from the incident.

ATTACHMENT 10A

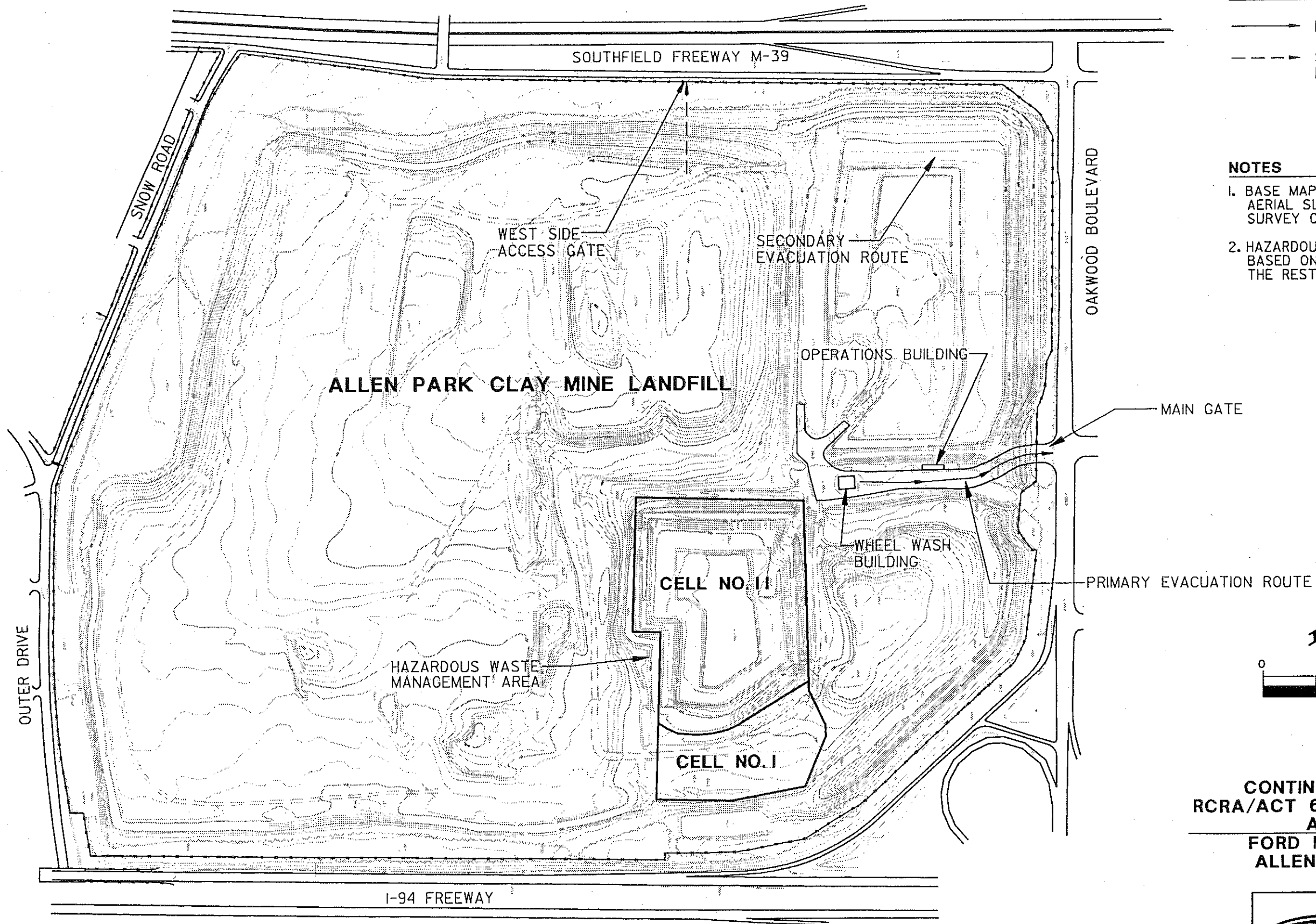
SITE PLAN

LEGEND

- PRIMARY EVACUATION ROUTE
- - -→ SECONDARY EVACUATION ROUTE

NOTES

1. BASE MAP TAKEN FROM AN APRIL 1993 AERIAL SURVEY BY ABRAMS AERIAL SURVEY CORP.
2. HAZARDOUS WASTE CELL BOUNDARIES BASED ON THE LEGAL DESCRIPTION IN THE RESTRICTIVE COVENANT.



CONTINGENCY SITE PLAN RCRA/ACT 64 OPERATING LICENSE APPLICATION FORD MOTOR COMPANY ALLEN PARK, MICHIGAN

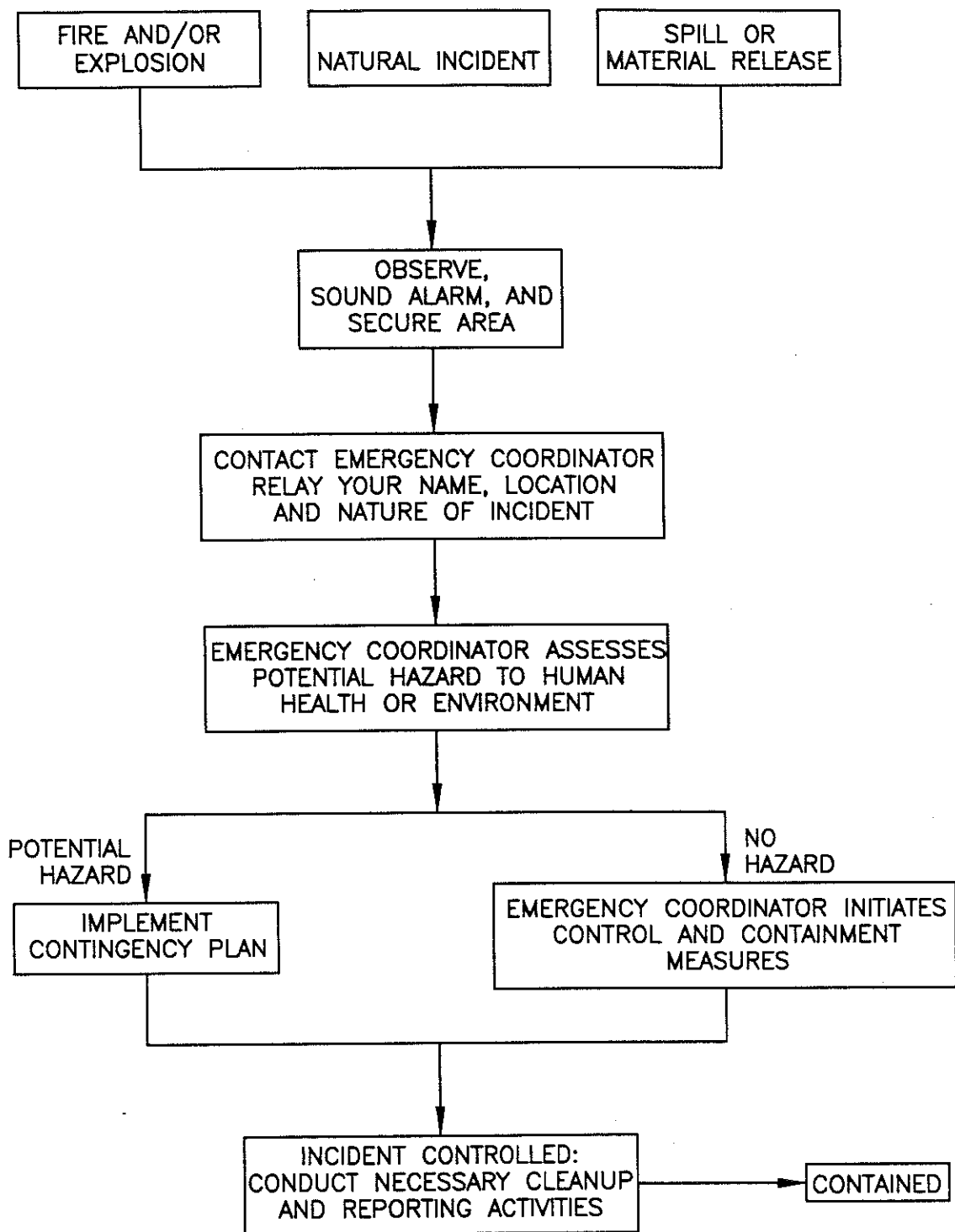


DWN. BY: TBM
APPROVED BY:
DATE: NOVEMBER 1993
PROJ. # 2804.05
FILE # 28040511.dgn

EPA ID# MID980568711

ATTACHMENT 10B

LOGIC DIAGRAM ON EMERGENCY RESPONSE PROCEDURES



**CONTINGENCY PLAN
IMPLEMENTATION LOGIC DIAGRAM
FORD MOTOR COMPANY
ALLEN PARK, MICHIGAN**



DWN. BY: TBM
APPROVED BY:
DATE: NOVEMBER 1993
PROJ. # 2804.05
FILE # 28040524

EPA ID # MID980568711

\$\$\$DWG\$\$\$
\$\$\$PRF\$\$\$
\$\$\$SCALE\$\$\$

FIGURE 10B-1

ATTACHMENT 10C
ACTION LEAKAGE RATE CALCULATIONS



COMPUTATION SHEET

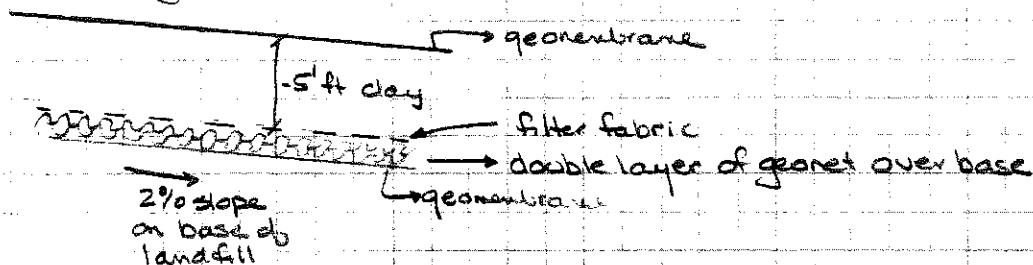
744 Heartland Trail P.O. Box 8923 Madison, WI 53708-8923 (608) 831-4444 FAX: (608) 831-3334

SHEET 1 OF 5

PROJECT / PROPOSAL NAME	PREPARED	CHECKED	PROJECT / PROPOSAL NO.
Ford Allen Park Clay Mine LF	By: SLB Date: 11/9/93	By: PDC Date: 11/9/93	2804 OS

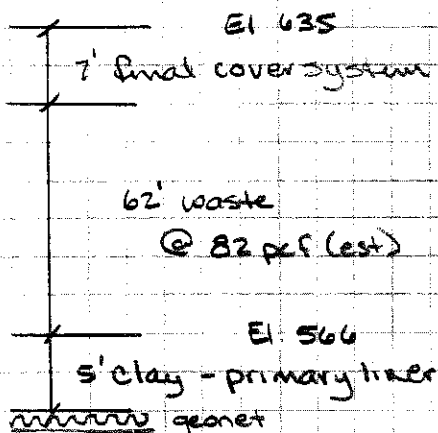
Action Leakage Rate (ARL) for Leak Detection System

Objective: Determine the ARL for the APCML given the following design information on the leak detection system



loading:

The following load is applied to the geonet with the leak detection system under maximum load conditions



compacted clay unit weight = 130 pcf (based on proctor values of 125-128 pcf optimum dry density)

Assume final cover components will also have unit weights = 130 pcf (conservative)

$$\text{Load applied to geonet} = (7' \times 130 \text{ pcf}) + (62' \times 82 \text{ pcf}) + (5' \times 130 \text{ pcf})$$

$$= 6644 \text{ psf} \quad \text{LF} = 1.0 \quad (\text{Load factor}) \checkmark$$



COMPUTATION SHEET

744 Heartland Trail P.O. Box 8923 Madison, WI 53708-8923 (608) 831-4444 FAX: (608) 831-3334

SHEET 2 OF 5

PROJECT / PROPOSAL NAME	PREPARED	CHECKED	PROJECT / PROPOSAL NO.
Ford-ARML	By: SLB Date: 11/9/93	By: PDX Date: 11/9/93	2804.05

LF	Load
1.0	4644 psf
1.5	9166
2.0	13,288
2.5	16,610
3.0	19,932
3.5	23,254

The maximum load applied to the leak detection system following closure is approximately 4700 psf ✓

Transmissivity testing was performed on Conwed KB8410 geonet with an applied load of 11000 psf. The results of this testing program are attached. The results of the testing are as follows

single geonet $7.06 \times 10^{-3} \text{ m}^2/\text{sec}$ ✓

double geonet $2.63 \times 10^{-3} \text{ m}^2/\text{sec}$ ✓

An applied load of 11,000 psf is equivalent to a 1.6 LF ✓ (Conservative)

The EPA recommends calculating the maximum drainage capacity using the following equation

$$Q = k \cdot h \cdot \tan \alpha \cdot B_{avg}$$

EPA 530-R-92-004

January 1992

Q = flow rate in drainage layer (gpad)

h = head in secondary liner $\leq 1 \text{ ft max}$

k = hydraulic conductivity (cm/sec) $\leq 0.01 \text{ cm/sec min}$

$\tan \alpha$ = slope of leak detection system (ft/ft) $\leq 0.01 \text{ ft/ft min}$

B_{avg} = width of flow in leak detection system perpendicular to the flow (ft)

$$B = D / \sin \alpha$$

D = leak detection thickness (ft)

$\sin \alpha$ = slope of leak detection system (ft/ft)

for small α $\tan \alpha \approx \sin \alpha$

Using this equation and the minimum design criteria, the EPA has determined the minimum action leakage rate to be 100 gpad assuming a factor of safety of 2



COMPUTATION SHEET

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SHEET

3

OF

5

PROJECT/PROPOSAL NAME	PREPARED	CHECKED	PROJECT/PROPOSAL NO.
Ford-APCMLF	By: SUB Date: 11/9/93	By: Date:	2804.05

Note: The above equation assumes that the flow rate, Q , is determined for an area of 1 acre.

Determine the drainage capacity for the leak detection system for the APCML for a 1-acre area. To simplify the calculation, convert the double geonet layer transmissivity into an equivalent hydraulic conductivity assuming a 1-foot thickness.

Transmissivity, $T = K \cdot t$ (thickness)

$$K = \frac{T}{t}$$

$$K = \frac{2.63 \times 10^{-3} \text{ m}^2/\text{sec}}{1 \text{ ft}} \times \frac{1 \text{ ft}}{30.48 \text{ m}} \times \frac{100 \text{ cm}}{\text{m}}$$
$$= 0.86 \text{ cm/sec} \checkmark$$

$$\beta_{\text{avg}} = \frac{D}{5 \text{ m}} = \frac{1 \text{ ft}}{0.02 \text{ ft/ft}}$$
$$= 50 \text{ ft} \checkmark$$

$$Q = 0.86 \frac{\text{cm}}{\text{sec}} \times 1 \text{ ft} \times 0.02 \frac{\text{ft}}{\text{ft}} \times 50 \text{ ft} \times \frac{1 \text{ ft}}{30.48 \text{ cm}} \times 7.48 \frac{\text{gal}}{\text{ft}^3} \times 86,400 \frac{\text{sec}}{\text{day}}$$
$$= 18,235 \text{ gpd per 1 acre}$$
$$= 18,235 \text{ gpd} \checkmark$$

for a FS = 2

$$\frac{Q}{2} = \frac{18,235}{2} \approx 9,100 \text{ gpd} \checkmark$$

\therefore The flow capacity in the leak detection layer exceeds the EPA minimum ARL of 100 gpd

$$\text{ARL} = 100 \text{ gpd} \checkmark$$

GEONET TRANSMISSIVITY TEST RESULTS

SINGLE GEONET LAYER

CLIENT: RMT, INC.

CONTACT: MR. PETER D. CREAMER

GEOSYNTEC JOB NO.: MQ200-001

MATERIAL: CLAY / TEXTILE / NET / LINER

DATE RECEIVED: 07/16/01

DATED TESTED: 07/16/01

CONWEO XB-8410

SPECIMEN	NORMAL STRESS: 11000 (psf) HYDRAULIC GRADIENT: 1.0 WATER COLLECTION TIME: 5 (s)					NORMAL STRESS: 18500 (psf) HYDRAULIC GRADIENT: 1.0 WATER COLLECTION TIME: 5 (s)					
	ROLL DIRECTION	RUN	VOLUME (cc)	FLOW RATE (cu m/s)	TRANSMISSIVITY (sq m/s)	PERMEABILITY* (cm/s)	RUN	VOLUME (cc)	FLOW RATE (cu m/s)	TRANSMISSIVITY (sq m/s)	PERMEABILITY* (cm/s)
	1	1110	2.22E-04	7.28E-04	N/A	1	250	5.00E-05	1.64E-04	N/A	
	2	1080	2.12E-04	6.96E-04		2	290	5.80E-05	1.80E-04		
	3	1060	2.12E-04	6.96E-04		3	285	5.70E-05	1.87E-04		
	AVE	1077	2.15E-04	7.06E-04		AVE	275	5.50E-05	1.80E-04		
<div>↑</div>											
SPECIMEN	NORMAL STRESS: 22000 (psf) HYDRAULIC GRADIENT: 1.0 WATER COLLECTION TIME: 10 (s)					NORMAL STRESS: 27500 (psf) HYDRAULIC GRADIENT: 1.0 WATER COLLECTION TIME: 15 (s)					
	ROLL DIRECTION	RUN	VOLUME (cc)	FLOW RATE (cu m/s)	TRANSMISSIVITY (sq m/s)	PERMEABILITY* (cm/s)	RUN	VOLUME (cc)	FLOW RATE (cu m/s)	TRANSMISSIVITY (sq m/s)	PERMEABILITY* (cm/s)
	1	190	1.90E-05	6.23E-05	N/A	1	170	1.13E-05	3.72E-05	N/A	
	2	170	1.70E-05	5.58E-05		2	180	1.20E-05	3.94E-05		
	3	170	1.70E-05	5.58E-05		3	185	1.23E-05	4.05E-05		
	AVE	177	1.77E-05	5.80E-05		AVE	178	1.19E-05	3.90E-05		

COMMENTS: * Coefficient of in-plane permeability.

GEONET TRANSMISSIVITY TEST RESULTS

DOUBLE GEONET LAYER

CLIENT: RMT, INC.

CONTACT: MR. PETER D. CREAMER

GEOSYNTec JOB NO.: MQ200-001

 MATERIAL: CLAY / TEXTILE / NET / NET / LINER

DATE RECEIVED: 07/16/01

DATED TESTED: 07/22/01

CONWEO X8-8410

SPECIMEN	NORMAL STRESS: 11000 (psf) HYDRAULIC GRADIENT: 1.0 WATER COLLECTION TIME: 5 (s)					NORMAL STRESS: 16500 (psf) HYDRAULIC GRADIENT: 1.0 WATER COLLECTION TIME: 5 (s)					
	ROLL DIRECTION	RUN	VOLUME (cc)	FLOW RATE (cu m/s)	TRANSMISSIVITY (sq m/s)	PERMEABILITY* (cm/s)	RUN	VOLUME (cc)	FLOW RATE (cu m/s)	TRANSMISSIVITY (sq m/s)	PERMEABILITY (cm/s)
		1	4140	8.28E-04	2.72E-03	N/A	1	880	1.76E-04	5.77E-04	N/A
		2	3976	7.95E-04	2.61E-03		2	860	1.72E-04	5.64E-04	
		3	3900	7.80E-04	2.56E-03		3	860	1.72E-04	5.64E-04	
		AVE	4005	8.01E-04	2.63E-03		AVE	867	1.73E-04	5.68E-04	
↑											
SPECIMEN	NORMAL STRESS: 22000 (psf) HYDRAULIC GRADIENT: 1.0 WATER COLLECTION TIME: 5 (s)					NORMAL STRESS: 27500 (psf) HYDRAULIC GRADIENT: 1.0 WATER COLLECTION TIME: 10 (s)					
	ROLL DIRECTION	RUN	VOLUME (cc)	FLOW RATE (cu m/s)	TRANSMISSIVITY (sq m/s)	PERMEABILITY* (cm/s)	RUN	VOLUME (cc)	FLOW RATE (cu m/s)	TRANSMISSIVITY (sq m/s)	PERMEABILITY (cm/s)
		1	450	9.00E-05	2.95E-04	N/A	1	435	4.35E-05	1.43E-04	N/A
		2	440	8.80E-05	2.89E-04		2	435	4.35E-05	1.43E-04	
		3	440	8.80E-05	2.89E-04		3	445	4.45E-05	1.46E-04	
		AVE	443	8.87E-05	2.91E-04		AVE	438	4.38E-05	1.44E-04	

COMMENTS: * Coefficient of in-plane permeability.

ATTACHMENT 10D
CORRESPONDENCE WITH LOCAL AUTHORITIES



Wayne Disposal Inc.

P. O. Box 5187
Dearborn, Michigan 48123
(313) 326-0200

November 11, 1981

Allen Park Police Department
16850 Southfield Road
Allen Park, Michigan 48101

RE: Allen Park Clay Mine, 17250 Oakwood Boulevard, Allen Park, Mi. 48

Dear Gentlemen/Ms.

In response to Federal requirements under the Resource Conservation and Recovery Act of 1976, all storers, treaters and disposers of hazardous waste must prepare a "Contingency Plan" and emergency procedures for implementation under situations that endanger human health and the environment such as fires, explosions or releases (sudden or non-sudden) of waste into the environment.

It is a requirement that the hazardous waste facility provide copies of the plan to appropriate emergency support agencies and facilities. The hazardous wastes disposed of at the Allen Park Clay Mine are generated at the Ford Rouge Manufacturing Complex, in particular in steelmaking and coking operations. These wastes are not flammable, ignitable, reactive nor corrosive. They pose virtually no threat to human health upon exposure.

Due to the small quantities and nature of these wastes, we believe the possibility of an emergency occurrence to be extremely remote; however, as the law requires we are supplying you with a copy of our plan. If any questions should arise, do not hesitate to call Walt Tomyn or me at 326-0200.

Very truly yours,
Wayne Disposal, Inc.

Mark A. Young
Mark A. Young, P.E.

HAY/kdb

c.c. Allen Park Fire Department
Wayne County Sheriff



Ford Motor Company

3001 Miller Road
Dearborn, Michigan 48121

June 10, 1987

Allen Park Police Department
16850 Southfield Road
Allen Park, Michigan 48101

Re: Ford Allen Park Clay Mine, 17005 Oakwood Boulevard, Allen Park, MI 48101

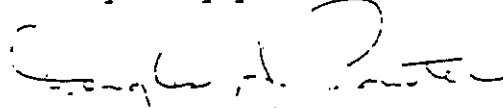
Dear Gentlemen/Ms.

In response to Federal requirements under the Resource Conservation and Recovery Act of 1976, all storers, treaters and disposers of hazardous waste must prepare a "Contingency Plan" and emergency procedures for implementation under situations that endanger human health and the environment such as fires, explosions or releases (sudden or non-sudden) of waste into the environment.

It is a requirement that the hazardous waste facility provide copies of the plan to appropriate emergency support agencies and facilities. The hazardous wastes disposed of at the Allen Park Clay Mine are not flammable, ignitable, reactive nor corrosive. We believe that physical contact with the wastes is not likely to injure human health.

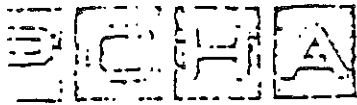
Due to the nature of these wastes, we believe the possibility of an emergency occurrence to be extremely remote; however, as the law requires we are supplying you with a copy of our plan. If any questions should arise, do not hesitate to call me at 594-2242.

Very truly yours,


Douglas A. Painter, Manager
Mining Department

Enclosures: 2

X.C. Allen Park Fire Department
Wayne County Sheriff
Michigan State Police
Oakwood Hospital
Outer Drive Hospital



OUTER DRIVE HOSPITAL UNIT OF PEOPLES COMMUNITY HOSPITAL AUTHORITY

H. ARTHUR SUGARMAN, ADMINISTRATOR 25400 OUTER DRIVE, LINCOLN PARK, MICHIGAN 48146 (313) 225-1111

NEARBY COMMUNITIES

CITIES OF

ALLEN PARK

BELLEVILLE

DEARBORN HEIGHTS

ECORSE

FLAT ROCK

GARDEN CITY

INKSTER

LINCOLN PARK

MELVINDALE

RIVER ROUGE

ROCKWOOD

ROMULUS

SOUTHGATE

TAYLOR

TRENTON

WAYNE

WESTLAND

WOODHAVEN

YPSILANTI

TOWNSHIPS OF

HURON

SUMMIT

SUPERIOR

VAN BUREN

YPSILANTI

November 23, 1981

Mr. Mark A. Young, P.E.
Wayne Disposal, Inc.
P.O. box 5187
Dearborn, MI 48128

RE: Allen Park Clay Mine

Dear Mr. Young:

In regards to your conversation with Mr. Greg Wheeler, Assistant Plant Engineer on November 23, 1981, we are requesting a chemical analysis breakdown of the hazardous material that is disposed of at the Allen Park Clay Mine.

This is to insure that should an accident occur that we at Outer Drive Hospital would have on file a statement as to the contents of the hazardous material for the protection of a possible emergency room case.

Thanking you in advance.

Sincerely,

Mr. Greg Wheeler,
Assistant Plant Engineer

A. Sample Taken:
Lab No. 004680

1. E.P. Toxicity per U.S. EPA SW-846, 1980

<u>Element</u>	<u>Results, ppm</u>	<u>Method of Analysis</u>
Arsenic	0.6	EPA 600/4-79-020
Barium	< 0.8	"
Cadmium	45.0	"
Chromium	1.6	"
Lead	340	"
Mercury	0.0015	Perkin-Elmer 303-3119
Selenium	2.0	I.C.P.
Silver	0.8	EPA 600/4-79-020

2. Chemical Analysis of Electric Furnace Flue Dust

<u>Element</u>	<u>Results (mg/kg)</u>	<u>Method of Analysis</u>
Arsenic	50	ASTM E 663
Barium	< 0.8	"
Cadmium	95.0	"
Chromium	500	"
Lead	4,500	"
Mercury	< 0.3	I.C.P.
Selenium	2.0	I.C.P.
Silver	6.0	ASTM E 663
Manganese	39,000	"
Zinc	150,000	"
Phosphorus	450	Molybdate
Sulfur	3,600	1- 32-Leco
Calcium	61,000	ASTM E 663
Magnesium	11,000	"
Aluminum	2,400	"
Silicon	15,000	Na ₂ CO ₃ Fusion
Potassium	5,900	ASTM E 663
Sodium	5,200	"
Fluorine	26.2	Ion Chromatograph
Total Iron	350,000	ASTM E 663
Dissolved Iron	800	"
Cyanide	0.1	EPA 79, M3352
Phenol	0.960	EPA 79, M#20.1
Carbon	4,700	Leco Wt-12

RICHARD A. HUEBLER
CITY ADMINISTRATOR

City of Allen Park

OFFICE OF ADMINISTRATOR

16850 SOUTHFIELD ROAD
ALLEN PARK, MICHIGAN 48101
PHONE: 928-1400



June 17, 1987

Mr. Douglas A. Painter, Manager
Ford Motor Company Mining Department
3001 Miller Road
Dearborn, Michigan 48121

Re: "Contingency (Emergency) Plan"
Ford Motor Mine

Dear Mr. Painter:

I wish to thank you for your plan. It will become part of the City Plan for Emergency Management.

For your information:

Emergency Management Coordinator is
Richard A. Huebler (City Administrator)
16850 Southfield Road, Allen Park, MI 48101
Phone: 928-1400

Deputy Emergency Management Coordinator is
Carson C. Smith (Administrative Assistant)
Address and phone number above

Environmental Inspector
Ardys Bennett (Building Inspector)
Address and phone number above

Hazardous Material Response
Raymond Bertoncelli (Fire Chief)
6730 Roosevelt, Allen Park, MI 48101
Phone: 928-0024

Copies of your plan have been issued to the concerned parties.

Respectfully,

Richard A. Huebler
Richard A. Huebler
City Administrator

RAE:vag

ATTACHMENT 10E
TYPICAL NOTIFICATION LETTER

ADDRESSEE

RE: Ford Allen Park Clay Mine Landfill
17005 Oakwood Boulevard
Allen Park, MI 48101

Dear Gentlemen/Madam:

In response to federal regulations (40 CFR 264.50), each owner or operator of a hazardous waste facility must prepare, maintain, and update a "Contingency Plan" designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

A copy of this Contingency Plan and revisions to the Plan must be maintained at the facility and submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services. The type wastes disposed of at this facility are not flammable, ignitable, nor reactive.

Due to the nature of these wastes, the possibility of an emergency occurrence is believed to be remote; however, federal regulations require that a copy of the current Contingency Plan be submitted to you. If you should have any questions, please contact me at (313) 322-4646.

Sincerely,

Jerry Amber, Manager
Waste and Hazardous Substances

SECTION 11
ENVIRONMENTAL MONITORING

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List of Attachments

Attachment 11A	Laboratory QA/QC Program
Attachment 11B	Statistical Testing Methods
Attachment 11C	Ambient Air Monitoring Plan and Procedures
Attachment 11D	Soil Monitoring Plan and Procedures
Attachment 11E	Leachate Sampling and Monitoring Plan
	Equipment Operation and Calibration Manuals
Attachment 11F	Surface Water Monitoring Plan and Procedures
	Equipment Operation and Calibration Manuals
Attachment 11G	Potentiometric Monitoring Plan and Procedures
Attachment 11H	Sedimentation Basin Monitoring Plan and Procedures
Attachment 11I	Leak Detection Monitoring Plan and Procedures
	Equipment Operation and Calibration Manuals
Attachment 11J	Lysimeter Monitoring Plan and Procedures

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Section 11

ENVIRONMENTAL MONITORING

Ford Motor Company has developed this Environmental Monitoring Program for the Allen Park Hazardous Waste Landfill in accordance with Part 111 of Michigan's Act 451 R299.9508(1)(b). The facility was issued a RCRA/Part 111 Act 451 Operating License on May 8, 1989, by the MDNR and June 8, 1989, by the USEPA for operation of Cell II (referred to as the existing license). Since that time, the cell was constructed but was not used for the disposal of waste materials. The existing license details the environmental monitoring program for the site. Monitoring was undertaken, according to the instructions of the existing license, to determine background constituent concentrations in the sediment, surface water, and leachate present at the facility.

Section 11 provides a description of the background data program that was implemented and details the environmental monitoring program that will be implemented during operation of Cell II after hazardous waste acceptance begins. This environmental monitoring program includes monitoring the soil, sediment, leachate, surface water, lysimeters, and the leak detection system. Attachments are included that describe the details of each monitoring program, including media-specific sampling procedures and the statistical analysis that will be performed to assess statistically significant changes in parameters. Attachment 11A describes the quality control procedures for the laboratories that will provide analyses of all samples collected as part of this program.

11.1 Testing Laboratory

Copies of the QA/QC programs at the three analytical laboratories proposed by Ford to provide analyses for the facility's Environmental Monitoring programs (identified in the following subsections) are included in Attachment 11A. The laboratories use daily standards, reference standards, blind standards, replicates, duplicates, spiked samples, and standard addition as part of their QA/QC program. The laboratories participate in professional organizations responsible for method validation and development (i.e., ASTM, WPCF, and ACS). In addition, the contract laboratory is enrolled in a commercial testing program (Analytical Products Group) that involves quarterly analysis of standards of accuracy.

Reliability monitoring within the laboratory includes the following:

1. Verification that the samples were collected, preserved, and stored correctly and that the holding times were met. Field blanks are utilized to check for the presence of constituents that impact the sample during sample collection and transportation.
2. Documentation that the samples were analyzed according to the proper method and concentration range and that the proper aliquot was used.
3. Construction of standard calibration curves for procedures or instruments with reproducible output using a blank and seven (7) concentration levels.
4. Analysis of a series of check standards in each batch to confirm that the curves are correct in terms of proper chemistry and instrument response.
5. Analysis of reagent and method blanks in each batch for laboratory evaluation.
6. Analysis of method standards for percent recovery data.
7. Analysis of one (1) sample in ten (10), done in replicate, to determine precision.
8. Analysis of one (1) spiked sample in ten (10) to determine accuracy.
9. Analysis of blind standards that are prepared by management and submitted under fictitious account names.

Note: Should other laboratories be used in the future, appropriate QA/QC documents will be provided to the Michigan Department of Natural Resources.

11.2 Ambient Air Monitoring Program

The Ambient Air Monitoring Plan and Procedures are included as Attachment 11C.

11.2.1 Operational Monitoring

Operational monitoring will be conducted on a year-round basis with a once-per 3-day to once-per-6-day frequency. Interruptions are possible in cases of landfill activity intermittence after 30 days following the cessation of activities. The target compound list will include a broad range of metals, VOCs, and particulates. During site operations, air samples will be collected using high volume samplers with glass fiber filters for particulates and metals and low-volume Tenax solid sorbent cartridges, SUMMA passivated canisters, or equivalent low-volume flow control sampling pumps. Target compound selection, monitoring strategy, sample collection procedures, and

laboratory analysis procedures and QA/QC requirements are discussed in Attachment 11C.

11.3 Soil Monitoring Program

The Soil Monitoring Plan and Procedures are included as Attachment 11D.

11.3.1 Description of Background Data

Completed Background Sampling

During the period from September 1989 to June 1993, soil was collected from along the entrance driveway for the purpose of determining background concentrations for the soil monitoring program. Sampling and analysis were conducted in accordance with the existing operating license. Samples were collected from a nominal depth of 3 inches at each of six sites located along the ditch farthest from the paved entrance road. The six locations are shown and numbered on Figures 11D-1 and 11D-2 of Attachment 11D.

Proposed Additional Background Sampling

A program will be instituted to determine background soil concentrations for all those parameters for which leachate monitoring is conducted and for which background soil data do not already exist, with the exception of bicarbonate and carbonate alkalinity and specific conductance, which are not generally analyzed for in soil. This list of parameters is presented in Attachment 11D, Table 11D-1. This Table identifies those constituents for which background soil data have already been collected, and those constituents for which samples will be collected as part of additional background sampling.

This supplemental program will consist of quarterly sampling for a period of 1 year. Each sampling event will consist of collecting one soil sample at each of the six background soil sampling locations shown on Figure 11D-2 of Attachment 11D. These samples will be analyzed for the parameters listed in Table 11D-1. The field procedures for collecting soil samples are presented in Attachment 11D. The data from the four quarterly sampling events will be added to the existing background data set for future monitoring purposes.

Future Background Sampling

Additional background soil sampling may be carried out at some time in the future if, as a result of the annual review of waste codes and leachate monitoring parameters, parameters are added to the leachate monitoring program for which background soil data do not exist. Parameters will be added to the list if constituents are identified in the waste code analysis that are not represented by current indicator constituents in the same group or class. The annual review and any modification to the sampling program will be submitted to the MDNR for approval. In this case, background soil values for these additional leachate parameters will be developed according to the plan outlined above for Proposed Additional Background Sampling.

11.3.2 Operational Monitoring

Operational samples will be collected annually from along the ditches located on either side of the paved entrance road. Each annual sampling event will consist of individual samples collected at each of the six locations shown on Figure 11D-2 of Attachment 11D, using the sample identification scheme shown on this diagram. Soil samples will be collected, preserved, and analyzed for the parameters listed in Table 11D-2 of Attachment 11D, and will be collected according to the procedures for soil sampling presented in Attachment 11D.

Michigan DNR-reported detection limits (RDLs) will be met for analysis of these parameters, as indicated in Table 11D-3. When these levels cannot be achieved for a particular analyte, the reason for this will be reported to the MDNR.

Copies of all required field data sheets and Chain-of-Custody Records will be retained at the facility.

At the end of each year of operation of Cell II, the parameter list for annual soil operational monitoring, Table 11D-2, will be reviewed and assessed to determine if additional parameters should be analyzed for in soil samples. If the annual evaluation of the leachate monitoring program indicates that constituents are present in the waste stream or in the leachate that are not monitored for in soil under the Table 11D-2 parameter list (either directly or by monitoring a constituent in the same chemical group or class), then the newly identified parameters will be added to the soil

operational monitoring program. Background soil concentrations for these new parameters will be established as discussed above.

Operational monitoring of site soil will be discontinued if construction of additional structures or roads at the facility results in the replacement of the drainage ditch with a buried culvert.

11.3.3 Statistical Evaluation and Response

After each soil monitoring sample analysis is provided by the laboratory, the results for all parameters will be inspected for completeness and tabulated with the existing soil data set. The data set will be maintained so that a historical record exists for all of the parameters sampled for in the soil monitoring program.

As soon as possible following each year of annual monitoring, a statistical evaluation of a portion of the data will be conducted to determine if a significant increase of selected parameters has occurred. In order to reduce the facility-wide false-positive rate (as discussed in Attachment 11B), statistics will be performed on the following parameters only: total recoverable phenolics, chrome, copper, arsenic, selenium, and volatile and semivolatile organic compounds. These parameters have been selected because of the expected waste stream and/or the compounds' environmental toxicity. The list of parameters for which statistical evaluation is performed will be evaluated on an annual basis. Waste codes and leachate analytical data will be reviewed to determine if the statistical evaluation should be expanded to include other parameters that are analyzed for that may provide reliable indicators of environmental impacts at the facility, given changes in waste or leachate composition.

If any of the parameters listed above for statistical analysis have background data sets that are 100 percent nondetect, then statistics will not be performed on the monitoring data. In this case, the actual level of detection will act as a trigger for resampling. In this case, an operational monitoring sample result that exceeds the analytical detection limit will be confirmed by collecting an individual sample at that location and analyzing for the parameter that exceeded background. This measure will be taken in order to rule out laboratory error as a source of the detection. If the analyte is not detected in the confirmatory sample, then no further action will be taken. If the analyte is detected, then the location will be resampled in quadruplicate. If any of the four

reported concentrations exceed the appropriate Part 201 of Act 451 Generic Industrial Cleanup Criteria, the procedure listed at the end of this subsection, beginning with step "b", will be followed. If none of the four reported concentrations exceed the appropriate Part 201 of Act 451 criteria, then no action will be taken.

The general statistical approach to be followed is presented in Attachment 11B of this document. Specific procedures to be followed for statistical evaluation of soil data are presented in Subsection 11D.3 of Attachment 11D. The statistical evaluation will include following a decision tree to determine which statistical test is appropriate for use for each analyte, based upon the percentage of results that are nondetects (below the RDL) for that analyte. The appropriate statistical test will be performed, and if the reported concentration results in an exceedance of that test statistic, but the reported concentration is less than the appropriate Part 201 of Act 451 Generic Industrial Cleanup Criteria (MDNR Operational Memorandum #14, Revision 2, June 6, 1995), then no action will be taken. If the reported concentration results in an exceedance of the test statistic and the appropriate Part 201 of Act 451 criteria, then the following procedure will be followed:

- a. An individual sample will be collected at the affected site and reanalyzed only for the component(s) that exceeded background.
- b. In the event that resampling confirms the presence of impacted soil between the ditch and the road, the horizontal and vertical extent of the impacted soil will be identified. The impacted soil will be excavated or a plan for remediation of the impacted area will be submitted to the WMD. If excavation of soil is selected as the remedial approach, cleanup will be confirmed by resampling the soil at the edges of the excavated area, and analyzing the samples for the operational monitoring program in use at that time. Excavated soil will be disposed of in accordance with applicable state and federal regulations.
- c. In the event that confirmatory sampling results again lead to an exceedance in the test statistic and the respective Cleanup Criteria sites after one round of soil removal, the Chief of the Waste Management Division (or a designee) will be contacted to discuss whether further measures need to be taken.

11.4 Groundwater Monitoring Program

In the previous operating license, a waiver for groundwater monitoring was requested based on specific site conditions. The previous operating license granted this waiver contingent on

monitoring of potentiometric heads at the site, in order to provide evidence of continued artesian conditions across the facility. Monitoring of the static water levels at the site will be continued and the data will be assessed in order to confirm that artesian conditions are present at the site, as discussed below in Subsection 11. 7.

11.5 Leachate Monitoring Program

The Leachate Sampling and Monitoring Plan are included as Attachment 11E. This includes the field procedures to be followed in the collection of leachate samples and the methods for analyzing the resulting data. Although no statistical evaluation is being proposed for the leachate monitoring program, it is nevertheless important to characterize the chemistry of leachate produced in the waste cell over time to help determine if water produced in the Leak Detection System represents leachate. For this reason, samples of leachate from both Cell I and Cell II will be monitored during the operation of the facility.

During the period of June 1989 through June 1993, a total of 17 leachate samples were collected from the Cell I sump. The parameters analyzed for are listed in Table 11E-1 of Attachment 11E. Cell I leachate will continue to be analyzed for this list of parameters. Clearly, background leachate data cannot be collected from Cell II because leachate will not be produced until waste is placed in the Cell. Once filling of Cell II is initiated, operational leachate monitoring of Cell II will begin, as discussed below. The parameter list for Cell II leachate has been developed based on the waste stream anticipated to be placed in Cell II at this time. Annual review of the wastes accepted for disposal in Cell II will be conducted, as described below, in order to provide a basis for the subsequent addition of parameters to the Cell II leachate operational monitoring program.

11.5.1 Operational Monitoring

Operational samples will be collected quarterly from the Cell II leachate sump and will be analyzed for the parameters listed in Table 11E-2 of Attachment 11E. Each sampling event will consist of an individual sample collected at the sump according to the procedures outlined in Attachment 11E. Copies of all required field data sheets and Chain-of-Custody Records will be retained at the facility. Leachate samples will be collected according to the procedures outlined in the Leachate Sampling and Analysis Plan (Attachment 11E). Leachate sample preservation requirements and reporting limits are presented in Table 11E-3 of Attachment 11E. Michigan DNR RDLs

will be met for analysis of these parameters, as indicated in Table 11D-3. When these levels cannot be achieved for an analyte, the reason for this will be reported to the MDNR.

The list of parameters in Table 11E-2 will be reviewed and revised annually. The review will consist of comparing waste codes for all material placed in Cell II over the previous four quarters with the list in Table 11E-2. Any of the RCRA Appendix IX parameters that appear on the waste codes and are not on the Cell II parameter list will be a candidate for inclusion on Table 11E-2. The parameters for which statistical evaluation is performed for other media sampled (soil, sediment, surface water, leak detection system) will also be evaluated at this time. Waste codes and leachate analytical data should be reviewed to determine if the statistical evaluation should be expanded to include other parameters that are analyzed for that may provide reliable indicators of environmental impacts at the facility, and are not represented in the existing list by constituents in a similar chemical group or class.

A letter report detailing the results of the review and recommendations for subsequent revisions to the operational monitoring parameter lists and statistical evaluations for soil, sediment, surface water, and the leak detection system will be submitted to the WMD for approval. This report will be submitted to the WMD within 90 days of the end of each year of operation of Cell II. The parameter lists for Cell I leachate and for the lysimeters will not undergo annual review because these points monitor Cell I, and are not anticipated to be affected by Cell II leachate.

11.5.2 Data Evaluation

After each leachate monitoring sample analysis is provided by the laboratory, the results will be inspected for completeness and tabulated with the existing leachate data set.

11.6 Surface Water Monitoring Program

The Surface Water Monitoring Plan and Procedures are included as Attachment 11F.

11.6.1 Description of Background Data

Completed Background Sampling

During the period from October 1989 to June 1993, a total of 34 water samples were collected from Allen Drain and the sedimentation pond to determine background composition for surface water, in accordance with the existing operating license. Each sample was collected following a rain event in which 0.5 inch or more of precipitation fell over a 24-hour period. These samples were collected from either Allen Drain, at the point indicated on Figures 11F-1 and 11F-2 of Attachment 11F, or from the alternate point where the sedimentation basin drains to Allen Drain. The parameters measured are listed in Table 11F-1 of Attachment 11F.

Proposed Additional Background Sampling

A program will be instituted to determine background surface water concentrations for all those parameters for which leachate monitoring is conducted and for which background surface water data do not already exist. This list of parameters is presented in Attachment 11F, Table 11F-1. This Table identifies those constituents for which background soil data have already been collected, and those constituents which will be sampled for in this program.

The background sampling program will consist of sampling every other month for a period of 1 year, or after rainfall events greater than one-half inch until sufficient samples are collected. Each sampling event will consist of collecting one sample from either Allen Drain, at the point indicated on Figures 11F-1 and 11F-2 of Attachment 11F, or from the alternate point where the sedimentation basin drains to Allen Drain. Surface water samples will be analyzed for the parameters listed in Table 11F-1. The field procedures for collecting surface water samples are presented in Attachment 11F. The data from the six additional background sampling events will be added to the existing background data set for future monitoring purposes.

Future Background Sampling

Additional background surface water sampling may be carried out at some time in the future if, as a result of the annual review of waste codes and leachate monitoring parameters, parameters are added to the leachate monitoring program for which background surface water data do not exist. Parameters will be added to the list if constituents are identified in the waste code analysis that are not represented by

current indicator constituents in the same group or class. The annual review and any modification to the sampling program will be submitted to the MDNR for approval. In this case, background surface water values for these additional leachate parameters will be developed according to the sampling plan outlined above for Proposed Additional Background Sampling.

11.6.2 Operational Monitoring

Surface water monitoring during the operation of Cell II will consist of collecting an individual sample on a quarterly basis from Allen Drain at the location shown on Figures 11F-1 and 11F-2 of Attachment 11F, or from the alternate point where the sedimentation pond drains to Allen Drain. Surface water samples will be collected, preserved, and analyzed for the parameters listed in Table 11F-2 of Attachment 11F, and will be collected according to the procedures for surface water sampling presented in Attachment 11F. Copies of all required field data sheets and Chain-of-Custody Records will be retained at the facility. Michigan DNR RDLs will be met for analysis of these parameters as indicated in Table 11F-3. When these levels cannot be achieved for a particular analyte, the reason for this will be reported to the MDNR.

At the end of each year of operation of Cell II, the parameter list for surface water operational monitoring, Table 11F-2, will be reviewed and assessed to determine if additional parameters should be analyzed for in the surface water sample. If the annual evaluation of the leachate monitoring program indicates that constituents are present in the waste stream or in the leachate that are not monitored for in the surface water sample under the Table 11F-2 parameter list (either directly or by monitoring a constituent in the same chemical group or class), then the newly identified parameters will be added to the surface water operational monitoring program. Background surface water concentrations for these new parameters will be established as discussed above.

11.6.3 Statistical Test and Monitoring

After each surface water sample analysis is provided by the laboratory, the results for all parameters will be inspected for completeness and tabulated with the existing surface water data set. The data set will be maintained so that a historical record exists for all of the parameters sampled for in the surface water monitoring program.

As soon as possible following each quarterly monitoring event, a statistical evaluation of a portion of the data will be conducted to determine if a significant increase of selected parameters has occurred. In order to reduce the facility-wide false-positive rate (as discussed in Attachment 11B), statistics will be performed on the following parameters only: total recoverable phenolics, chrome, copper, arsenic, selenium, volatile and semivolatile organic compounds. These parameters have been selected because of the expected waste stream and/or the compounds' environmental toxicity. The list of parameters for which statistical evaluation is performed will be evaluated on an annual basis. Waste codes and leachate analytical data will be reviewed to determine if the statistical evaluation should be expanded to include other parameters that are analyzed for that may provide reliable indicators of environmental impacts at the facility, given changes in waste or leachate composition.

If any of the parameters listed above have background data sets that are 100 percent nondetect, then statistics will not be performed on the monitoring data. In this case, the actual level of detection will act as a trigger for resampling. An operational monitoring sample result that exceeds the analytical detection limit will be confirmed by collecting an individual sample at that location and analyzing for the parameter that exceeded background. This measure is being taken in order to rule out laboratory error as a source of the detection. If the analyte is not detected in the confirmatory sample, then no further action will be taken. If the analyte is detected, then the location will be resampled in quadruplicate. If any of the four reported concentrations exceed the detection limit, then the procedure listed at the end of this subsection, beginning with step "b" will be followed.

The general statistical approach to be followed is presented in Attachment 11B of this document. Specific procedures to be followed for statistical evaluation of surface water data are presented in Subsection 11F.3 of Attachment 11F. Surface water data will be evaluated on an intra-point comparison basis, so that operational monitoring data are compared to the background data set, which was collected at the same monitoring location earlier in time. The statistical evaluation will include following a decision tree to determine which statistical test is appropriate for use for each analyte, based upon the percentage of results that are nondetects (below the reportable detection quantitation limit [RDL]) for that analyte. The appropriate statistical test will

be performed, and in the event that a statistically significant increase is found, then the following procedure will be implemented:

- a. The sedimentation basin will be immediately resampled. This will involve collecting an individual sample of the drain water and analyzing for parameters that were found to be statistically significantly different than background. If these results confirm that a significant increase has occurred, then the following additional steps will be taken.
- b. Within 30 days of identifying a statistically significant increase over background, a determination will be made as to whether or not a discharge to Allen Drain is occurring or will occur during subsequent storm events.
- c. The Director, the Chief of the Waste Management Division, or his designee will be provided a written report detailing the measures to be taken to prevent and eliminate any such discharge in the future.

11.7 Potentiometric Monitoring Plan

A groundwater monitoring waiver has been granted under R299.9611(3)(b), as discussed previously in Subsection 11.4. Monitoring of the static water levels at the site will be maintained to verify the continued existence of the waiver conditions, which depend upon the hydrogeologic conditions at the facility.

The Potentiometric Monitoring Plan and Procedures are included as Attachment 11G. Monitoring requirements include the measurement of static water levels on an annual basis at the following wells: 2D, 5D, 10D, 102D, 103D, 104D, and 105D. These wells are shown on Figure 11G-1 of Attachment 11G. Most of these wells are under flowing artesian conditions and are outfitted as shown on Figures 11G-2 and 11G-3 of Attachment 11G. The annual water level information will be tabulated, and records will be maintained in chronological order. Water levels will be evaluated to confirm that upward gradients exist at the monitoring points. In the event that hydrogeologic conditions significantly change at the site, the director will be notified immediately.

11.8 Sedimentation Basin Monitoring Program

The Sedimentation Basin Monitoring Plan and Procedures are included as Attachment 11H.

11.8.1 Description of Background Data

Completed Background Sampling

During the period from September 1989 through March 1993, sediment was collected semiannually from the four locations in the sedimentation basin identified on Figures 11H-1 and 11H-2 of Attachment 11H. A total of seven individual samples were collected from each of the four locations, in accordance with the existing operating license. For each parameter listed in Table 11H-1 of Attachment 11H, the average concentration was calculated at each of the four sampling locations.

Proposed Additional Background Sampling

A program will be instituted to determine background sediment concentrations for all those parameters for which leachate monitoring is conducted and for which background sediment data do not already exist. This list of parameters is presented in Attachment 11H, Table 11H-1. This Table identifies those constituents for which background sediment data have already been collected, and those constituents which will be sampled for in this program.

This program will consist of sampling every other month for a period of 1 year. Each sampling event will consist of collecting duplicate samples at each of the four sediment sampling locations shown on Figure 11H-2 of Attachment 11H. These samples will be analyzed for the parameters listed in Table 11H-1. The field procedures for collecting sediment samples are presented in Attachment 11H. The data from the additional six background sampling events will be added to the existing background data set for future monitoring purposes.

Future Background Sampling

Additional background sediment sampling may be carried out at some time in the future if, as a result of the annual review of waste codes and leachate monitoring parameters, parameters are added to the leachate monitoring program for which background sediment data do not exist. Parameters will be added to the list if constituents are identified in the waste code analysis that are not represented by current indicator constituents in the same group or class. The annual review and any modification to the sampling program will be submitted to the MDNR for approval. In this case, background sediment values for these additional leachate parameters will

be developed according to the plan outlined above for Proposed Additional Background Sampling.

11.8.2 Operational Monitoring

Operational monitoring of sediment will begin once waste is accepted for disposal at Cell II. The sediment monitoring program will consist of collecting individual samples at each of the four sampling locations on a semiannual basis. The samples will be collected according to the field procedures outlined in Attachment 11H, and will be analyzed for the parameter list provided in Table 11H-2. The sediment sampling locations are shown on Figure 11H-2 of Attachment 11H. Michigan DNR RDLs will be met for analysis of these parameters, as indicated in Table 11H-3. When these levels cannot be achieved for a particular analyte, the reason for this will be reported to the MDNR. Copies of all required field data sheets and Chain-of-Custody Records will be retained at the facility.

At the end of each year of operation of Cell II, the parameter list for semiannual sediment operational monitoring, Table 11H-2, will be reviewed and assessed to determine if additional parameters should be analyzed for in sediment samples. If the annual evaluation of the leachate monitoring program indicates that constituents are present in the waste stream or in the leachate that are not monitored for in sediment under the Table 11H-2 parameter list (either directly or by monitoring a constituent in the same chemical group or class), then the newly identified parameters will be added to the sediment operational monitoring program. Background sediment concentrations for these new parameters will be established as discussed above.

11.8.3 Statistical Testing and Response

After sediment sample analyses are provided by the laboratory, the results for all parameters at each sampling location will be inspected for completeness and tabulated with the existing sediment data set. The data set will be maintained so that a historical record exists for all of the parameters sampled for in the sediment monitoring program.

As soon as possible following each semiannual sampling event, a statistical evaluation of a portion of the data will be conducted to determine if a significant increase of selected parameters has occurred. In order to reduce the facility-wide false-positive

rate (as discussed in Attachment 11B), statistics will be performed on the following parameters only: total phenolics, chrome, copper, arsenic, selenium, and volatile and semivolatile organic compounds. These parameters have been selected because of the expected waste stream and/or the compounds' environmental toxicity. The parameters for which statistical evaluation is performed will be evaluated on an annual basis. Waste codes and leachate analytical data will be reviewed to determine if the statistical evaluation should be expanded to include other parameters that are analyzed for that may provide reliable indicators of environmental impacts at the facility, given changes in waste or leachate composition.

If any of the parameters listed above have background data sets that are 100 percent nondetect, then statistics will not be performed on the monitoring data. In this case, the actual level of detection will act as a trigger for resampling. An operational monitoring sample result that exceeds the analytical detection limit will be confirmed by collecting an individual sample at that location and analyzing for the parameter that exceeded background. This measure is being taken in order to rule out laboratory error as a source of the detection. If the analyte is not detected in the confirmatory sample, then no further action will be taken. If the analyte is detected, then the location will be resampled in quadruplicate. If any of the four reported concentrations exceed the appropriate Part 201 of Act 451 Generic Industrial Cleanup Criteria, then the procedures listed at the end of this subsection, beginning with step "b", will be followed. If none of the four reported concentration exceed the Part 201 of Act 451 criteria, then no action will be taken.

The general statistical approach to be followed is presented in Attachment 11B of this document. Specific procedures to be followed for statistical evaluation of sediment data are presented in Subsection 11H.3 of Attachment 11H. The statistical evaluation will include following a decision tree to determine which statistical test is appropriate for use for each analyte at each of the four sampling locations, based upon the percentage of results that are nondetects (below the RDL) for that analyte. The sediment data will be evaluated on an intra-point basis, so that operational monitoring data from each location will be compared to the background data set from that same sampling location. The appropriate statistical test will be performed, and if the reported concentration results in an exceedance of that test statistic, but the reported concentration is less than the appropriate Part 201 of Act 451 Generic Industrial

Cleanup Criteria (MDNR Operational Memorandum #14, Revision 2, June 6, 1995), then no action will be taken. If the reported concentration results in an exceedance of the test statistic and the appropriate Part 201 of Act 451 criteria, then the following procedure will be followed:

- a. The pond sediment at the impacted location(s) will immediately be resampled and analyzed for any constituent found to exceed the relevant test statistic.
- b. In the event that resampling confirms the presence of impacted sediment in the sedimentation basin, the horizontal and vertical extent of the impacted area must be identified. Once the area has been identified, the contaminated sediment will be excavated or a plan for remediation of the area will be submitted to the WMD. If excavation of sediment is selected as the remedial approach, then cleanup will be confirmed by sampling the sediment at the excavation limits and analyzing it for the parameters listed in the operational monitoring program. Sediment that is removed will be disposed of in accordance with applicable state and federal regulations.
- c. In the event that sediment is removed, a plan detailing the measures to be taken to prevent such a recurrence will be submitted.
- d. In the event that confirmatory analysis results indicate that impacted sediment remains in place after one round of sediment removal, the Chief of the Waste Management Division (or a designee) will be contacted to discuss whether further measures need to be taken.

11.9 Leak Detection Monitoring Program

The Leak Detection Monitoring Plan and Procedures are included as Attachment 11I.

11.9.1 Description of Background Data

Completed Background Sampling

Small quantities of water were periodically collected from the leak detection system of Cell II between May and June of 1993, in accordance with the existing operating license. A total of four samples were collected and analyzed for the parameters listed in Table 11I-1 of Attachment 11I. From the analysis results of the four samples, an average composition and a standard deviation for each measured parameter have been calculated.

Proposed Additional Background Sampling

A program will be instituted to determine background concentrations for those parameters for which leachate monitoring will be conducted and for which background leak detection data do not already exist. This list of parameters is presented in Attachment 11I, Table 11I-1. This Table identifies those constituents for which background leak detection data have already been collected, and those constituents for which samples will be collected as part of additional background sampling.

This program will consist of sampling every other month for a period of 1 year. Each sampling event will consist of collecting one sample of water from the leak detection monitoring sump of Cell II. The sample will be analyzed for the parameters listed in Table 11I-1. The field procedures for collecting the leak detection system sample are presented in Attachment 11I. The data from the additional six background sampling events will be added to the existing leak detection background data set for future monitoring purposes.

Future Background Sampling

Additional background leak detection sampling may be carried out at some time in the future if, as a result of the annual review of waste codes and leachate monitoring parameters, parameters are added to the leachate monitoring program for which background leak detection data do not exist. Parameters will be added to the list if constituents are identified in the waste code analysis that are not represented by current indicator constituents in the same group or class. The annual review and any modification to the sampling program will be submitted to the MDNR for approval. In this case, background leak detection values for these additional leachate parameters will be developed according to the plan outlined above for Proposed Additional Background Sampling.

11.9.2 Operational Monitoring

Operational monitoring of the leak detection sump will begin once waste is accepted for disposal at Cell II. The leak detection monitoring program will consist of collecting an individual sample at the sump on a quarterly basis, provided that a sufficient volume of water can be obtained. The sample will be collected according to the field procedures outlined in Attachment 11I, and will be analyzed for the parameter list provided in Table 11I-1. Michigan DNR RDLs will be met for analysis of these

parameters, as indicated in Table 11I-1. When these levels cannot be achieved for a particular analyte, the reason for this will be reported to the MDNR.

Copies of all required field data sheets and Chain-of-Custody Records will be retained at the facility. Monthly records will be made of the total volume of water collected in the Cell II leak detection sump, before liquid is discharged into the sanitary sewer. Records of the volumes will remain on file at the facility.

At the end of each year of operation of Cell II, the parameter list for quarterly leak detection operational monitoring, Table 11I-2, will be reviewed and assessed to determine if additional parameters should be analyzed for in the leak detection samples. If the annual evaluation of the leachate monitoring program indicates that constituents are present in the waste stream or in the leachate that are not monitored for under the Table 11I-2 parameter list (either directly or by monitoring a constituent in the same chemical group or class), then the newly identified parameters will be added to the leak detection operational monitoring program. Background leak detection concentrations for these new parameters will be established as discussed above.

11.9.3 Statistical Testing and Response

After each leak detection sample analysis is provided by the laboratory, the results for all parameters will be inspected for completeness and tabulated with the existing leak detection system data set. The data set will be maintained so that a historical record exists for all of the parameters sampled for at the leak detection sump.

As soon as possible following the round of quarterly leak detection system monitoring, a statistical evaluation of a portion of the data will be conducted to determine if a significant increase of selected parameters has occurred. In order to reduce the facility-wide false-positive rate (as discussed in Attachment 11B), statistics will be performed on the following parameters only: total phenolics, chrome, copper, arsenic, selenium, and volatile and semivolatile organic compounds. These parameters have been selected because of the expected waste stream and/or the compounds' environmental toxicity. The parameters for which statistical evaluation is performed will be evaluated on an annual basis. Waste codes and leachate analytical data will be reviewed to determine if the statistical evaluation should be expanded to include other

parameters that are analyzed for that may provide reliable indicators of environmental impacts at the facility, given changes in waste or leachate composition.

If any of the parameters listed above have background data sets that are 100 percent nondetect, then statistics will not be performed on the monitoring data. In this case, the actual level of detection will act as a trigger for resampling. An operational monitoring sample result that exceeds the analytical detection limit will be confirmed by collecting an individual sample at that location and analyzing for the parameter that exceeded background. This measure is being taken in order to rule out laboratory error as a source of the detection. If the analyte is not detected in the confirmatory sample, then no further action will be taken. If the analyte is detected, then the location will be resampled in quadruplicate. If any of the four reported concentration exceed the detection limit, the procedure listed at the end of this subsection, beginning with step "b", will be followed.

The general statistical approach to be followed is presented in Attachment 11B of this document. Specific procedures to be followed for statistical evaluation of leak detection system data are presented in Subsection 11I.3 of Attachment 11I. The statistical evaluation will include following a decision tree to determine which statistical test is appropriate for use for each analyte, based upon the percentage of results that are nondetects (below the RDL) for that analyte. The leak detection data will be evaluated on an intra-point basis, so that operational data will be compared to the background data set collected at the leak detection sump. The appropriate statistical test will be performed, and if a statistically significant increase is confirmed, then the following procedure will be implemented:

- a. The leak detection sump will be resampled for all parameters listed in Table 11I-3, and the results will be analyzed by the same statistical test used above in order to determine if an exceedance has occurred.
- b. The Chief of the Waste Management Division (or a designee) will be notified in writing within 7 days that an exceedance has occurred.
- c. All parameters in Table 11I-2 of Attachment 11I will be evaluated for statistical significance, and the results will be reported.
- d. Immediate action will be taken to implement the facility contingency plan, as appropriate.

- e. The Chief of the Waste Management Division (or a designee) will be provided with weekly telephone updates and written reports every 2 weeks regarding the progress to date in determining the cause of the exceedance, and the results of all samples from environmental monitoring conducted at the facility.
- f. Within 30 days of notification, a determination will be made as to whether or not a failure in the liner system has occurred. A written plan will be submitted. The plan will detail one of the following:
 - i. Documentation certifying that a liner failure has not occurred or will not result in groundwater impacts
 - ii. Documentation certifying those measures that have been taken or that will be taken to repair the primary liner system
 - iii. Documentation certifying those measures that have been taken or that will be taken to provide protection against groundwater impacts

11.10 Lysimeter Monitoring Program

The Lysimeter Monitoring Plan and Procedures are included as Attachment 11J.

11.10.1 Description of Background Data

Between the period from January 1991 up to March 1993, samples were collected from the two lysimeters located between Cell I and Cell II. The location of the lysimeters is shown on Figure 11J-1 of Attachment 11J. Each lysimeter is placed, in accordance with the existing operating license, at an elevation of 560 feet mean sea level (M.S.L.), for the monitoring of *in situ* saturated clays adjacent to Cell I. The vacuum pressure lysimeters are constructed of Teflon® and are of equivalent design to the schematic lysimeter described in Attachment 11J. A total of 10 samples have been collected to date from lysimeter 1-A, and 13 samples have been collected from lysimeter 1-B. The parameters measured during the background monitoring are listed in Table 11J-1 of Attachment 11J.

11.10.2 Operational Monitoring

The lysimeters will be sampled quarterly for chemical analysis, if sufficient volumes of water are available. Procedures for lysimeter sampling are presented in Attachment 11J. The parameters that will be analyzed, as well as the detection limits, container types, preservatives, holding times, and analytical methods are listed in Table 11J-2 of Attachment 11J. The parameter list reflects the fact that the lysimeters are designed to monitor Cell I of the landfill. Therefore, the lysimeter parameter list will

not be revised based on the waste or leachate characteristics from Cell II. Michigan DNR RDLs will be met for analysis of these parameters, as indicated in Table 11J-3. When these levels cannot be achieved for a particular analyte, the reason for this will be reported to the MDNR. Copies of all required field data sheets and Chain-of-Custody Records will be retained at the facility.

11.10.3 Statistical Evaluation and Response

After each quarterly monitoring sample analyses are provided by the laboratory, the results for all parameters will be inspected for completeness and tabulated with the existing lysimeter data set. The data set will be maintained so that a historical record exists for all of the parameters sampled for in each lysimeter.

As soon as possible following each round of quarterly monitoring, a statistical evaluation of the data will be conducted to determine if a significant increase of parameters has occurred.

If any of the parameters which are sampled for have background data sets that are 100 percent nondetect, then statistics will not be performed on the monitoring data. In this case, the actual level of detection will act as a trigger for resampling. An operational monitoring sample result that exceeds the analytical detection limit will be confirmed by collecting an individual sample at that location and analyzing for the parameter that exceeded background. This measure is being taken in order to rule out laboratory error as a source of the detection. If the analyte is not detected in the confirmatory sample, then no further action will be taken. If the analyte is detected, then the location will be resampled in quadruplicate. If any of the four concentrations exceed the detection limit, then the procedures listed at the end of this subsection, beginning with step "b", will be followed. If none of the four reported concentrations exceed the detection limit, then no action will be taken.

The general statistical approach to be followed is presented in Attachment 11B of this document. Specific procedures to be followed for statistical evaluation of lysimeter data are presented in Subsection 11J.3 of Attachment 11J. The statistical evaluation will include following a decision tree to determine which statistical test is appropriate for use for each analyte at each of the lysimeters, based upon the percentage of censored data for that analyte. The lysimeter data will be evaluated on an intra-point

comparison basis, so that operational data from each lysimeter will be compared to the background data set from the same lysimeter. The appropriate statistical test will be performed, and if the reported concentration results in an exceedance of that test statistic, then the following procedure will be followed:

- a. The lysimeter(s) will be resampled, in quadruplicate, and reanalyzed for only those parameters previously found to exceed background. The data will be tested statistically using the procedures outlined in Attachment 11J.
- b. If a statistically significant increase is suggested by the resampling, the Chief of the Waste Management Division (or a designee) will be notified in writing within 7 days.
- c. Immediate action will be taken to implement the facility contingency plan, as appropriate.
- d. The Chief of the Waste Management Division, or a designee, will be provided with weekly telephone updates and written reports every 2 weeks regarding the progress to date in determining the cause of impaction, and the results of all samples from environmental monitoring conducted at the facility.
- e. Within 30 days of notification, a determination will be made as to whether or not a failure in the liner system has occurred. A plan will be submitted in writing, that is certified by a registered professional engineer. The plan will detail one of the following:
 - i. Documentation certifying that a liner failure has not occurred or will not result in groundwater impacts
 - ii. Documentation certifying those measures that have been taken or that will be taken to repair the liner system
 - iii. Documentation certifying those measures that have been taken or that will be taken to provide protection against groundwater impacts

ATTACHMENT 11A
LABORATORY QA/QC PROGRAM



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3985 RESEARCH PARK DRIVE
ANN ARBOR, MICHIGAN 48106
313 761-1389

October 14, 1993

Mr. Michael J. Schmoldt
RMT, Inc.
744 Heartland Trail
Madison, WI 53717-1934

RE: ENCOTEC Laboratory Qualifications

Dear Mr. Schmoldt:

As per my conversation with Jeff Hartlund of Ford Motor Company, I am pleased to provide the following ENCOTEC qualifications information. I have included a copy of ENCOTEC's Quality Assurance Manual for your review which outlines ENCOTEC's Quality Assurance/Quality Control program. This document also includes information regarding the analytical services ENCOTEC provides, a inventory of major analytical instrumentation, and a listing of our laboratory certifications.

ENCOTEC has provided comprehensive consulting and laboratory services since 1969, and has provided these services to the Ford Motor Company and its representatives since 1972. The firm has performed long-term, large scale investigations and surveys involving hazardous waste, hazardous waste sites and environmental monitoring for both public agencies and private sector clients.

The ENCOTEC laboratories currently operate under two USEPA CLP contracts for organics and has met the performance evaluation requirements for inorganics analysis. ENCOTEC has provided laboratory services for numerous RI/FS projects with both USEPA and Michigan DNR oversight, including a number of sites where the Ford Motor Company is a listed PRP. Our laboratories provide regular subcontractor services to the Michigan DNR through three of Michigan's prime contractors for Act 307 investigations.

ENCOTEC currently provides analytical services, as well as sampling services, for Michigan solid waste and hazardous waste landfills operated by BFI and Wayne Disposal. Our laboratories recently teamed with RMT for the Augusta Development Project which operated with Michigan DNR oversight. ENCOTEC is also familiar with the monitoring requirements for the Ford Allen Park Clay Mine Landfill, as we assisted our parent company, Rollins Environmental Services, in the submittal of their proposal for landfill management



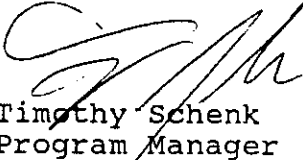
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services. We have also spent some time discussing its requirements with John Phillips of Ford Motor Company, where ENCOTEC is currently performing method development to address concerns with cyanide analysis for the site.

I hope this provides ample information to illustrate ENCOTEC's ability to meet the Michigan DNR requirements for the monitoring of the Allen Park Clay Mine Landfill, as well as illustrate the depth of our experience in this area. We appreciate being considered for the performance of these services and welcome the opportunity to participate in performance evaluation testing. If there is any additional information I can provide to the Ford Motor Company or yourself, please don't hesitate to contact me at (313) 761-1389.

Respectfully,

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION



Timothy Schenk
Program Manager

Enclosure

#10000

cc: Jeff Hartlund - Ford Motor Company
John Schenk - ENCOTEC